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APPENDIX TO THE JOURNALS
OF THE
SENATE AND ASSEMBLY
OF THE
TWENTY-EIGHTH SESSION
OF THE
LEGISLATURE OF THE STATE OF CALIFORNIA.

Volume VI.



SACRAMENTO:
STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.
1889.

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TENTH BIENNIAL REPORT

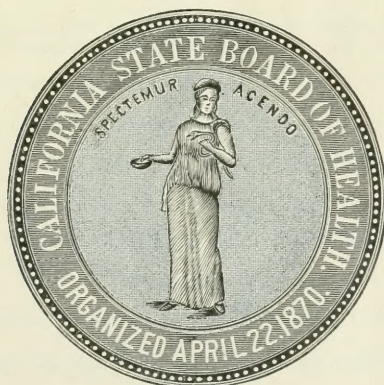
OF THE

STATE BOARD OF HEALTH

OF

CALIFORNIA.

For the Fiscal Years from June 30, 1886, to June 30, 1888.



SACRAMENTO:

STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.

1888.

MEMBERS OF THE CALIFORNIA STATE BOARD OF HEALTH.

President.

HENRY S. ORME, M.D. Los Angeles.

Secretary.

GERRARD G. TYRRELL, M.D. Sacramento.

W. R. CLUNESS, M.D. Sacramento.

R. BEVERLY COLE, M.D. San Francisco.

JAMES SIMPSON, M.D. San Francisco.

J. M. BRICELAND, M.D. Shasta.

C. A. RUGGLES Stockton.

STANDING COMMITTEES OF THE STATE BOARD OF HEALTH.

1. On the Salubrity of Public Institutions, Schools, Hospitals, Prisons, Factories, etc.

DOCTORS COLE, ORME, AND SIMPSON.

2. On Statistics relating to Life and Health, Modes of Employment and of Living, and the Comparative Healthfulness of different localities.

DOCTORS CLUNESS, BRICELAND, AND TYRRELL.

3. On Intoxicating Liquors, Inebriate Asylums, Pathological Influence of Alcohol, etc.

DOCTORS SIMPSON, COLE, AND RUGGLES.

4. On Influence of Irrigation, Tree Planting, etc.

DOCTORS RUGGLES, ORME, AND CLUNESS.

On Legislative Business.

DOCTORS BRICELAND, ORME, AND TYRRELL.

On these Committees the Secretary of the Board is ex officio a member.

REPORT OF THE BOARD.

To his Excellency R. W. WATERMAN, Governor of California :

In presenting the tenth biennial report of the State Board of Health to your Excellency, the Board can, with much pleasure, refer to the fact of the increased popularity of the Board, and to the general desire of the public to aid its work in its watchful care of the public health, and its endeavor to prevent epidemic disease from entering this State.

It is also with gratification the Board can announce to your Excellency that through the forethought of the Legislature it was placed in a position to take such measures of prevention, that when the State was threatened with an epidemic of smallpox, it was enabled by the appointment of proper sanitary officers to prevent in a great measure its spread and limit its duration.

It has, however, become more than ever evident to the Board that, in order to confer upon the State that benefit for which the State Board of Health was organized, a change must be made in our health laws. At present they are inefficient, and lack that precision and mandatory power that are necessary to the proper maintenance of sanitary regulations. The laws relating to births, marriages, and deaths are not observed, and in order that we may obtain reliable statistics of the death rate throughout the State, it is absolutely necessary that a record of each death be made wherever it occurs. The necessity of this is obvious, for by it only can we determine the healthfulness of the different sections of the State; the relation that exists between climate and longevity; the effect of modes of life and living; the relative effect of drainage upon health, etc.; and above all, the power of determining positively and legally the question of death, where the right of succession to property is involved in the ascertainment of such fact. Another no less important result effected by a correct return of deaths is the prevention of crime, or its probable detection.

The safety of the people being the especial province of our Board, we consider the general vaccination of the public one of the most important aids for that purpose; and as a step in that direction we recommend that no child be admitted into the public schools without first showing satisfactory evidence that vaccination has been successfully performed.

We also recommend that a law be established making it compulsory upon all persons cognizant of the fact, to make known to the proper officer the existence of contagious or infectious disease, whenever such occurs in their person, family, or habitation.

We also recommend that it be made compulsory to establish local Boards of Health throughout the State. These should be required to act in co-operation with the State Board, keeping it advised of the appearance of epidemic or contagious disease, and the causes by which they are apparently promoted, that thus through them unification of purpose may be complete with the State Board, and preventive measures immediately instituted for the suppression of disease.

We desire to call your Excellency's attention to the subject of the mineral springs of this State. For many years this Board has endeavored to excite an interest in the great sanitary resources which lie undeveloped in these springs, and four years since, the Legislature, upon the recommendation of the Board, created the office of State Analyst, and passed a law making it his duty to analyze and give to the public the chemical constituents of these springs. Owing to the great number and varying properties of these mineral waters, the State Analyst found he had not assistance enough to do the work, and our springs, that should be a source of great revenue to our State, are still comparatively unknown. We would therefore recommend that a sufficient sum be set apart for the State Analyst to employ competent assistants in this great work, so that the medicinal value of our springs (which cannot be surpassed, or perhaps equaled, by any of the thermal springs of Europe) may be determined, and we may thus be enabled to offer to invalids additional inducements to visit our State to recuperate their health.

The subject of quarantine having engaged the attention of the Board for some years past, it is with great satisfaction that our Board can announce to your Excellency that through its persistent efforts it has been enabled to have a law pass Congress establishing quarantine stations at San Francisco and San Diego, which, we trust, will be so organized as to afford the utmost protection to the State from the invasion by sea of any infectious or contagious disease. We must not, however, neglect the danger which threatens us by land. Upon our southern border we are constantly menaced by smallpox, cholera, and yellow fever; the latter of which, being epidemic in many parts of Mexico, is a constant source of anxiety.

We therefore ask your Excellency to impress upon the Legislature the urgent necessity that exists for the continuation of the contagious disease fund, which did such excellent service for us within the past two years, not only in limiting the spread of disease upon this coast, but in enabling our Board to be represented at the National Conference of State Boards of Health, whereby coöperation with sister States for mutual protection was obtained.

We would also call your Excellency's attention to the fact that leprosy is being gradually introduced into this State, principally through Chinese immigration, and would recommend that all such cases found within this State be strictly segregated, and a law passed forbidding the landing or introduction of such persons, upon any pretense whatever, and their immediate return to the place from whence they came, if so imported.

We hereby append the reports requested by your Excellency as to the sanitary condition and administration of the various institutions receiving State aid.

In our Permanent Secretary's report will be found a detailed account of the diseases which have prevailed throughout the State, their mortality, and the means used for their suppression, together with the necessary expenditure of the Board.

We regret to say that the yearly appropriation given to the State Board of Health is not sufficient to enable it to do such work as properly comes within its province, and the Board is unanimously of the opinion that an increase of the appropriation would be a manifest benefit to the State.

We would also recommend to your Excellency that the law organizing the State Board of Health be so amended as to provide a per diem of ten

dollars for each member while engaged in the actual duties of the Board, as a slight compensation for the loss of time necessarily given in the service of the State.

H. S. ORME, M.D., President.

G. G. TYRRELL, M.D., Secretary.

W. R. CLUNESS, M.D.

JAMES SIMPSON, M.D.

R. B. COLE, M.D.

CHAS. A. RUGGLES, M.D.

J. M. BRICELAND, M.D.

ABSTRACT OF PROCEEDINGS

OF THE

QUARTERLY MEETINGS HELD DURING THE THIRTY-EIGHTH AND
THIRTY-NINTH FISCAL YEARS, ENDING JUNE 30, 1888.

THE REGULAR QUARTERLY MEETING OF THE CALIFORNIA STATE BOARD
OF HEALTH,

Was held in Sacramento July 3, 1886, at the usual hour.

Present—Dr. H. S. Orme, President; Dr. G. G. Tyrrell, Secretary; Dr. W. R. Cluness, Dr. J. M. Briceland, members; and by invitation, Professor W. B. Rising, State Analyst, and Hon. T. L. Thompson, Secretary of State. The absent members were Dr. R. Beverly Cole, Dr. Jas. Simpson, and Dr. H. C. Crowder, who each sent notes explanatory of their absence.

The minutes of the last meeting having been read and approved, the Secretary read the following letter from United States Senator George Hearst, in reply to a communication sent him regarding the passage of the quarantine bill:

WASHINGTON, D. C., May 9, 1886.

G. G. TYRRELL, Esq., *Secretary State Board of Health, Sacramento, California:*

DEAR SIR: Your favor of April twenty-seventh, in relation to the "Act to establish a Quarantine Station at the port of San Francisco," has been received, and the matter shall have my immediate attention and favorable consideration.

Thanking you for your kindness in specially directing my attention to this important matter, I remain,

Very truly yours,

GEORGE HEARST.

Which was received and ordered on file.

A communication from his Excellency, the Governor of Colorado, regarding the establishing of quarantine against the introduction of diseased cattle, was read and ordered placed on file.

The Secretary reported a visit to Truckee at the request of the citizens, which was approved, and a report thereof was ordered detailed in his biennial report.

The Secretary read his financial report for fiscal years thirty-six and thirty-seven, which was approved and ordered placed on file.

On motion of Dr. Cluness, the Secretary was instructed that having first obtained the consent of Dr. I. A. Watson, Secretary of the American Public Health Association, he was authorized by this Board to have reprinted in the ninth biennial report about to be published, Dr. G. Sternberg's prize essay on "Disinfection and Individual Prophylaxis against Infectious Disease," which was carried unanimously.

Professor W. B. Rising, State Analyst, made a verbal report upon the condition of the laboratory and the facilities possessed for the work designed to be accomplished by his office, but owing to a lack of assistants he was unable, without further aid, to carry out the provisions of the bill creating his office. He explained how the Secretary of the Viticultural Commission had analyses made. That Commission, having a fund at its

disposal, could pay for help, and the Analyst could hire assistants. If the State Board of Health had a like fund, there would be no difficulty in obtaining analyses of foods, drugs, etc., and the mineral springs of the State; the analyses of the latter require careful manipulation, which, under Professor Bunsen, of Vienna, he had successfully studied, and was of the opinion that with assistance an exhaustive analysis of the medicinal waters of the State could be made at the rate of one each month, which would inure to the great benefit of the State. He thought that with an appropriation of \$2,500 a year all the analytical work necessary could be done.

After the explanation of Professor Rising as to the necessity of funds to carry on his office in accordance with the intent of the law and for the benefit of the State; it was moved by Dr. Cluness—

That it is the sense of this Board that an appropriation of \$2,500 a year is required for the purpose of carrying out the object of the bill creating a State Analyst, and that the Governor be respectfully requested to ask for such appropriation in his next biennial message.

Carried.

Dr. J. M. Briceland moved that the thanks of the Board be returned to Professor Rising for his remarks, and that the Board pay his traveling expenses to this meeting, which was carried.

On motion, the Secretary was instructed to notify the absent members that they will be required to have their reports upon the subjects assigned them ready for the Secretary not later than the fifteenth day of August, as the biennial report must be in the hands of the State Printer by the first of September.

The Secretary announced to the members present the titles of the papers he had already received, as well as those promised for the biennial report, and it was agreed that not less than fifteen hundred copies be ordered printed by the State Printer for distribution.

There being no further business, after some desultory conversation upon sanitary matters, the meeting adjourned.

GERRARD G. TYRRELL,
Permanent Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

Was held in Sacramento October 16, 1886, at the usual hour.

Present—Dr. H. S. Orme, President; Dr. G. G. Tyrrell, Secretary; Dr. James Simpson, Dr. H. C. Crowder, Dr. J. M. Briceland, Dr. W. R. Cluness. Dr. R. B. Cole was not present, being absent from the State. Governor Stoneman and Hon. E. W. Maslin were present by invitation.

The minutes of the last meeting having been read and approved, the Secretary read a letter from Dr. Alembly Jump, of Downieville, relative to the appearance of typhoid fever in Forest City, and asking instructions in connection therewith. The Secretary informed the Board that he had replied to Dr. Jump's letter, advising him as to the course to be pursued. The Secretary also read the reply of Dr. Jump, detailing the result of his visit to Forest City, and his efforts to establish a sanitary reform there.

On motion, Dr. Jump's communications were placed on file, and the Secretary's action fully approved.

Dr. Cluness, in connection with the subject of typhoid fever, detailed a statement made in a late medical journal relative to the production of typhoid fever by dead animal matter decaying in wells, and considered

the subject worthy of continued investigation. The cases to which he referred were those in which a number of dead and decaying frogs, toads, etc., were found in a well which was undergoing a process of cleansing, and to the water from which the disease was attributed.

Dr. James Simpson considered that the genuine cases of typhoid fever, with the characteristic ulceration of Peyer's glands, are more rarely met with than formerly, and believed that a great many of the continued fevers that we now treat lack the essential characteristics of typhoid fever. He related some cases in confirmation of this view, and was inclined to believe in there being a typho-malarial fever, or, at least, a typhoid condition accompanying malaria.

Dr. J. M. Briceland remarked that in his town (Shasta) the source of all the supply of water to the inhabitants was derived from wells, and, to his knowledge, the remains of dead animals, such as snakes, toads, etc., have frequently been found in them, as a cause of the unpleasant flavor of the water, but he never found as a result of the drinking of this water any injurious consequences to speak of; he was doubtful of the theory that water so polluted could originate typhoid fever in the absence of the specific germ.

The Secretary read a communication from a Mrs. Furney, of Fresno, asking the assistance of the State Board of Health to remove a nuisance. The Secretary informed the Board that he had written to the lady, detailing the proper course to be pursued by her in the premises.

On motion, the letter was placed on file, and the action of the Secretary approved.

The Secretary presented a communication from the proprietor of the "Sanitary Engineer," asking for a renewal of the Board's subscription.

On motion of Dr. Cluness, the subscription to the "Sanitary Engineer" was ordered discontinued, except one copy for the use of the Board.

On motion of Dr. Simpson, the Secretary was authorized to subscribe for one copy of the "Sanitary News," one copy of "Sanitary Engineer," one copy of "Sanitarium," and any other sanitary publication that might add to the efficiency of this Board, which was carried unanimously.

The Secretary desired to call the attention of the Board to an editorial which appeared in the "San Francisco Evening Bulletin" of October 1, 1886, entitled "Precaution Better than Cure," as follows:

An epidemic of smallpox prevails in southwestern Sonora. Its greatest ravages are at Guaymas, Hermosillo, and intermediate points on the line of the railroad. Those places are in daily communication with San Francisco—via the Sonora and Southern Pacific Railroads—but no steps have been taken to establish a quarantine at the State boundary line. It would be an easy matter to guard the single line of communication across the Colorado at Yuma.

It is known by experience that smallpox gives the authorities a good deal of trouble when it gets into this State; and the best plan is to fight it at a distance.

Will the State Board of Health take notice, and act accordingly?

All passengers should be quarantined at the border for a time covering the incubation of the fell disease.

And, also, the following reply, which was approved of by the Board, and, on motion, ordered spread upon the minutes:

EDITOR EVENING BULLETIN: In an editorial article in your valuable paper, on Friday evening last, entitled "Prevention Better Than Cure," you very truthfully remarked that smallpox, in an epidemic form, prevailed in southwestern Sonora, and complain that no steps have been taken to establish a quarantine at the boundary line. Further on you ask the suggestive question, "Will the State Board of Health take notice, and act accordingly?" In reply, allow me, as Executive officer of the Board, to say that at the session of the Legislature, January, 1885, Governor Stoneman, in his message, advised, and subsequently the State Board of Health, in anticipation of just such a contingency as has now arisen, demanded that a Contingent Fund be provided for the purpose of protecting this State by

quarantine against the approach of infectious diseases, if such danger should threaten us. It was asked that this fund be placed at the disposal of the Governor, to be used only at his discretion, and by the advice and at the request of the State Board of Health. I regret to say that the advice of the Governor to the Legislature was totally ignored, and the demand of the State Board of Health denied most positively.

At a subsequent meeting of the State Board of Health, alarming reports having been received from Sonora, the Governor was asked if there was any fund at his disposal that could be used for quarantine purposes. He replied that there was not, and that there were no means of obtaining a fund, except by a proclamation calling upon each county to levy a special tax for that purpose, and then such tax would be under the control of the county levying it, and would not be available by the State Board of Health, except by and with the consent of such county. Under these circumstances the State Board of Health can only watch with dismay the approach of preventable disease, being utterly powerless, from want of funds, to place barriers to its progress in the persons of an efficient corps of quarantine officers along our southern border. The State is now almost wholly defenseless against the approach of cholera, yellow fever, or smallpox, whenever they choose to cross our frontier, for which disastrous condition of affairs we have to thank either the disgraceful parsimony, criminal negligence, or, more probably, the unmitigated stupidity of the Legislature of 1885.

Yours respectfully,

G. G. TYRRELL, M.D.,
Permanent Secretary State Board of Health.

SACRAMENTO, October 3, 1886.

The Secretary then read report of Consul Willard, at Guaymas, reporting twenty-six deaths from smallpox, and a total death rate of forty-three for the month of September, 1886.

On motion the report was ordered on file, and the inability of the Board, for the want of funds, to order an immediate quarantine deplored.

The Secretary presented the ninth biennial report of the State Board of Health of California, just published, of which an edition of two thousand was ordered printed, which, having been considered by the Board, was approved, and the Secretary commended for his assiduity in getting out so promptly so valuable a report, which was ordered to be distributed.

Dr. Orme reported as our delegate to the National Conference of State Boards of Health and the American Public Health Association, held at Toronto, Canada, October 4 to October 9, 1886, that while en route he called upon Surgeon-General J. B. Hamilton, of the Hospital Marine Service at Washington, D. C., who assured him that he was much pleased to meet a representative of the State Board of Health of California, and that he would always be ready and willing in the future, as he had been in the past, to coöperate with our Board, and to use his official influence and power to assist us whenever we needed his aid in preventing and "stamping out" all epidemic disease which might threaten the invasion of our State, either by ocean travel or by way of our southern border.

The National Conference, as also the American Public Health Association, were largely attended by representatives of the different State Boards of Health, as also other health organizations of the United States and Provinces of Canada, with many of whose names we are all familiar as being the leading sanitarians and health officers of the country. The papers read and the discussions thereon were of a most interesting character, and of great practical importance to any one engaged in the good work of State preventive medicine.

A few of the many important subject-matters reported and discussed might be mentioned, being those which have from time to time engaged the thoughtful care and attention of our own Board. The first subject before the Conference was, "A comparative view of sanitary laws, and what changes are needed in those of Maine," which, after an animated discussion, was referred to a special committee to codify the laws of the different States and present them at the next meeting of the Conference.

The second subject was the "Transportation of dead bodies, especially

those dying from contagious or infectious diseases," which elicited a lengthened discussion and great diversity of opinion. It appeared, however, to be the sense of the majority of those present that the transportation of any or every dead human body, the subject of infectious disease, over the different great lines of travel, ought to be discouraged by the members of the medical profession. As to the length of time a body ought to be required to remain buried, of those dying of cholera, yellow fever, smallpox, etc., it was thought best, after a long and thorough discussion of the whole subject, not to fix the limit of number of years. Circumstances as to climate, seasons, heat and cold, etc., would necessarily have to govern in the majority of cases, and therefore that this should be left to the local health authorities of the different States to regulate.

The third subject, "How, in the investigation of the causes of disease, can State Boards of Health secure the best results?" After considerable discussion a committee of five was appointed to devise a plan for obtaining facts from the physicians in the different States through their respective State Boards of Health, and that the committee report at the next annual meeting a plan to that end, should it consider the same to be advisable.

Many other subjects of vital importance to State Boards of Health and sanitarians were reported upon and discussed, both at the Conference and at the meeting of the American Public Health Association, viz.: "Should vaccination be made compulsory;" "Local Boards of Health;" "On blank forms for a uniform system of vital statistics, etc."

A resolution was adopted at the Conference urging the importance and necessity of disinfecting and destroying the sputa of all persons suffering from pulmonary consumption, so as to protect those in attendance on or exposed to the disease. But the most important subject-matter, which could at the time interest our State Board of Health, was in relation to interstate notification in regard to infectious diseases and interstate coöperation in regard to inspections and other work for the prevention of the same. After a very full and free discussion of the whole subject the following resolutions were adopted by the National Conference, and the American Public Health Association was requested to indorse them:

WHEREAS, It is necessary for the protection and preservation of the public health that prompt information should be given of the existence of cholera, yellow fever, and smallpox; be it,

1. *Resolved*, That it is the sense of the National Conference of State Boards of Health, that it is the duty of each State, Provincial, and Local Board of Health in any locality in which said diseases may at any time occur, to furnish immediately information of the existence of such disease to Boards of Health of neighboring and provincial States, and to the local Board in such States as have no State Board.

2. *Resolved*, That upon rumor or report of the existence of pestilential disease, and positive definite information thereon not being obtainable from the proper health authorities, this Conference recommends that the health officials of one State shall be privileged and justified to go into another State for the purpose of investigating and establishing the truth or falsity of such reports.

3. *Resolved*, That whenever practicable, the investigations made under the preceding section shall be done with the coöperation of the State or local health authorities.

4. *Resolved*, That any case which presents symptoms seriously suspicious of one of the aforementioned diseases, shall be treated as suspicious, and reported as provided for in cases announced as actual.

5. *Resolved*, That any case respecting which reputable and experienced physicians disagree as to whether the disease is or is not pestilential, shall be reported as suspicious.

6. *Resolved*, That any case respecting which efforts are made to conceal its existence, full history, and true nature, shall be deemed suspicious, and so acted upon.

7. *Resolved*, That in accordance with the provisions of the foregoing resolutions, the Boards of Health of the United States and Canada represented at this Conference do pledge themselves to an interchange of information, as herein provided.

The resolutions in their entirety were adopted.

It was moved that the action of the Board of Health of the State of

Louisiana in dealing with the outbreak of yellow fever at Biloxie, in August last, be commended by this Conference of State Boards of Health, which was carried.

The National Conference refused to become a section of the State Boards of Health of the American Public Health Association, and moved that a committee be appointed to draft a constitution and by-laws with a view of placing the Conference on a permanent basis, and report at next meeting of the Conference.

This motion was unanimously adopted.

On motion, it was resolved to levy the sum of \$5 on each State and Province represented at the Conference, to meet incidental expenses.

Dr. J. N. McCormick was reelected President, and Dr. G. P. Conn, Secretary for the ensuing year.

The Conference adjourned to meet at Washington, D. C., at the same time of the meeting of the International Medical Congress.

The American Public Health Association, after transacting a great deal of business, including some important work bearing upon sanitation and State preventive medicine, and hearing the reports from the committees on State Boards of Health, and the report from the several representatives of the several State Boards of Health (California among the number, as regards her sanitary laws, etc.), adjourned to meet in Memphis, Tennessee, December, 1887, Dr. G. M. Sternberg being elected President, and Dr. Irving A. Watson reelected Secretary.

Dr. Cluness moved that whatever expenses Dr. Orme had incurred in behalf of the California State Board of Health be refunded him, and that his expenses as delegate to the American Public Health Association and the Conference of State Boards of Health be paid, which was unanimously carried.

Hon. E. W. Maslin stated, in reply to a question, that he had prepared some bills, and was preparing others, for presentation to the Legislature, embodying the recommendations presented to the Governor by this Board, and hoped that they would be so drawn as to comprise the legislation required for the efficiency of the Board.

Dr. Briceland, who was a candidate for the Legislature from Shasta, promised that, if elected, he would give these bills his utmost attention, and, if possible, carry them safely through the Senate, as he fully believed that such legislation would add to the safety of the people and the good of the community.

There being no further business, the meeting adjourned.

G. G. TYRRELL,
Permanent Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH,

Was held in Sacramento January 12, 1887, at the usual hour.

Present—Dr. H. S. Orme, President; Dr. G. G. Tyrrell, Secretary; Doctors Cluness and Briceland, members; and by invitation, Dr. Matthews of Tehama, Dr. Young of Stockton, Dr. Foulkes of Oakland, Professor Rising of Berkeley, and Hon. E. W. Maslin, legal adviser of the Board. Letters of apology were read from Dr. H. C. Crowder, Dr. Jas. Simpson, and Dr. R. B. Cole, explaining their absence from the meeting.

The minutes of the last meeting having been read and approved, Dr. Cluness, commenting upon the subject of the interment of dead bodies,

inquired of the President, Dr. Orme, if the American Public Health Association had decided upon any general rule to be observed about the period when bodies might be safely disinterred for transportation. He said that upon endeavoring to get a deceased body removed from Mazatlan, he discovered that no body could be disinterred and removed under five years' burial.

Dr. Orme replied that no fixed date had been recommended by the association, as such measures would be influenced by the climate, soil, etc., of each place, and therefore the regulations governing the disinterment would have to be governed by the place of interment, and adapted thereto.

The Secretary then read the report of Consul Willard, at Guaymas, who reported smallpox as still there, but confined chiefly to the lower classes and Indians.

The prevalence of glanders in several parts of the State was discussed, during which Dr. Matthews, of Tehama, related an instance of death from this disease in Butte County, in the person of a man who had become inoculated with the disease and speedily succumbed. He was of the opinion that legislative power ought to be sought to enable us to exterminate this dreadful disease from California.

After a very general discussion of the subject, it was the unanimous opinion of the Board that legislation should be had upon this matter immediately, to prevent the needless sacrifice of human life, which is sure to take place if the disease is permitted to spread.

The Secretary desired to call the attention of the members of the Legislature then present, Drs. Briceland, Matthews, and Young, to some matters pertaining to the State Board of Health, upon which legislation is desired in order to increase the efficiency of the Board and to add to the welfare of the State. He said that perhaps it was known to those gentlemen that smallpox was now upon the borders of this State, and at any time it may cross the line and invade California. Yellow fever was endemic in Mazatlan, Rosario, Guaymas, and at any moment may become epidemic, and be precipitated upon us. Cholera is still in Japan; is epidemic in South America, and will, doubtless, travel to Panama, from thence it will reach Mexico and probably California. To arrest any of these diseases by quarantine, there is not one dollar that can be used by the Governor for that purpose, therefore, the State Board of Health desires that a contingent fund be appropriated for that purpose. The sum should not be less than \$20,000, to be used at the discretion of the Governor and only by the advice and at the request of the State Board of Health. Should we happily escape from the threatened dangers, the fund would not be drawn upon. The Board, however, earnestly hoped such sum would be placed at the disposal of the Governor, if needed.

Drs. Matthews and Young, members of the Assembly, promised such measure their earnest support, and it was unanimously agreed that the Committee on Legislation be and is hereby instructed to ask the legislative Committee on Ways and Means to place such sum in the appropriation bill of this session of the Legislature.

The Secretary then explained that it was also sought to amend the health laws of California in relation to the burial of the dead. As now practiced, it requires no formality (except in cities having ordinances to that effect) to bury the dead, and as a consequence, crime is not unfrequently hidden in the grave. We now desire a law enacted that will not allow the burial, cremation, or other disposal of the dead human body, without first having obtained a permit, signed by a proper officer upon presentation to him of a certificate of death signed by the attending phy-

sician, and giving the name, age, nativity, sex, occupation, and cause of death; or, if deceased had no attending physician, then by the Coroner, or in his absence, by two reputable citizens, who shall certify to the best of their ability. It is hoped by this means to collect all the deaths in the State, to diminish crime, and obtain an authentic record which will legally establish the decease of any one whose death it is desirable to prove beyond doubt.

Again, the Board desires to amend the laws relating to births, marriages, and deaths, so that the vital statistics of this State might be rendered of some value in their compilation. It is proposed to pay a small fee for each birth, marriage, and death recorded, and to make it a penal offense to neglect this duty.

It is also proposed to amend the law relating to Boards of Health, and compel the establishment of such Boards in every county of the State, and if the organization of such Board or Boards is refused or neglected, then that the State Board shall have the power to organize such Boards, and render them a charge upon the county in the same manner as if organized by the county itself.

It is also proposed that a law be enacted compelling the vaccination of each and every child attending the public schools of this State, as is the law in New York and other progressive States.

It is also proposed to enact a law granting such mandatory power to the State Board of Health as will increase its efficiency and add to the welfare of the State.

Hon. E. W. Maslin then read the laws he proposed to present upon these subjects, and said the new Constitution stood in the way of obtaining any special legislation, as was the case before its adoption, but thought that such laws as were needed to insure the sanitary welfare of the State would be so general in their nature as to disarm all opposition to their passage.

The members of the Legislature and the Board having discussed the merits of each bill, it was resolved that the Committee on Legislation be requested to present the bills to the Legislature.

The members present promised them all the aid in their power to bestow, as they believed the bills to be drawn in the interest of the public, and for its benefit alone.

Professor W. B. Rising, State Analyst, stated that he had a deep interest in having the mineral waters of the State analyzed. He had received a large number of letters from parties abroad, asking information about the medicinal properties of the various mineral springs and a copy of their analysis, to which he was reluctantly obliged to reply that as yet no official analysis of them was made. In the matter of analyzing foods, drugs, etc., he thought he could illustrate it by what was being done in France, which he proceeded to do by explaining the different courses pursued, and in the most lucid manner gave an idea of what might be done in this State if the people were only educated up to its necessity. He detailed the case of a young man who was rendered dangerously ill by drinking grape juice adulterated with salicylic acid, which he declared was a common adulterant of unfermented wines on this coast. If an analysis of adulterated foods or drinks was reported by the State Analyst officially, stating the brand, etc., it would drive effectually such articles out of the market, and thus remove a constant factor in the production or intensification of disease.

Professor Rising also asked the approval of the Board to the following amendments to the law relating to the State Analyst, which he proposed having introduced this session of the Legislature, if indorsed by the Board:

SECTION 8. It shall be the duty of the State Analyst to maintain at the University, with the consent of the Board of Regents, a Museum of Chemistry. Here shall be collected and displayed a cabinet of chemical products, so arranged as to illustrate the various processes employed in chemical industries. This collection shall be supplemented by drawings, plans, etc., of existing chemical works, together with analyses of these various products, to the end that students of the University, and others interested in any branch of chemical industry, may have the opportunity of studying any or all the various processes used in chemical manufacture. He shall also collect samples of the various minerals, vegetables, waste products, of whatever kind, which are used elsewhere in chemical manufacture, or which may be so used, and examine, analyze, and investigate the same. He shall also collect such statistics and information relating to chemical problems as may be of interest or value to the State. He shall publish, from time to time, the results of his investigations pertaining to chemical industries in special bulletins, and in a biennial report to the Regents of the University of California.

SEC. 9. The State Analyst shall attend and participate, as he shall be able, in all meetings, conventions, and conferences of analysts in this country and in Europe, and permission is hereby granted him to absent himself from the State for that purpose; *provided*, he obtain the consent of the State Board of Health, the State Mining Bureau, the State Board of Viticultural Commissioners, and the Board of Regents of the University of California.

After some necessary explanations by Professor Rising of the nature of the proposed amendments and their practical utility, it was, on motion—

Resolved, That the amendments be approved and the bill referred to the Committee on Legislation for further action.

Which was carried.

It was discussed and approved that the Committee on Legislation ask for an appropriation of \$5,000, for two years, to procure such clerical assistance to the State Analyst as will enable him to analyze the mineral waters of the State and make an official report thereon.

A communication was read from Buford & Co., Indianapolis, proposing to dispose of to this Board copies of the proceedings of the "Conference of States Boards of Health," held at Toronto, Canada, October, 1886, which is to be bound in the report of the State Board of Health of Indiana.

On motion of Dr. Cluness, it was resolved that the Secretary be authorized to confer with the Secretary of the Conference of State Boards of Health, by letter, and ascertain if the firm of Buford & Co. is authorized to issue such proceedings, and if so, to order at least fifty copies.

The Legislative Committee having been instructed to get their proposed measures before the Legislature at the earliest moment possible, and no further business being before the Board, on motion, the meeting adjourned.

GERRARD G. TYRRELL,
Permanent Secretary.

A SPECIAL MEETING OF THE STATE BOARD OF HEALTH,

Was held, at the request of the President, at the office of the Secretary, March 8, 1887.

A quorum being present, the object of the meeting, as explained by the Secretary, was for the purpose of taking into consideration the question of quarantining the southern border of the State, smallpox being reported as prevailing to an alarming extent in Los Angeles.

A telegram was received from Dr. R. B. Cole and Dr. James Simpson, stating that, in their opinion, a strict quarantine at this time against smallpox was useless, it having already invaded the State; in which opinion Dr. Meares, Health Officer of San Francisco, concurred.

The members present, having heard the reports from the President and

Secretary and a letter from Dr. Magee, of San Diego, were of the opinion that while strict quarantine might not now be applicable, yet an inspection of all trains coming from Texas, Mexico, and Los Angeles is very desirable, and specially is it desirable that arrangements be made to be ready to develop a strict quarantine system at any moment, and for this purpose the Secretary is hereby ordered to proceed to San Francisco, and confer with the railroad authorities, that coöperation with them may be secured, and report the result of the same at the next quarterly meeting.

On motion, meeting then adjourned.

G. G. TYRRELL,
Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

Was held in the office of the Secretary, Saturday, April 23, 1887, at the usual hour.

Present—Dr. Orme, President; Dr. Tyrrell, Secretary; Dr. H. C. Crowder, and Dr. J. M. Briceland. Absent, Drs. Cluness, Simpson, and Cole.

The minutes of the last meeting, and those of the special meeting, having been read and approved, the Secretary read a communication from Dr. Borde, relative to the sanitary condition of Tulare City, and also noting the absence of smallpox or other contagious diseases upon any of the trains he had inspected; which, on motion, was ordered placed on file.

The Secretary also read a communication from Dr. J. J. Choate, Medical Inspector at Colton, informing the Board of the absence of smallpox.

A telegram was received from Dr. Hagan, Health Officer at Los Angeles, by request of Dr. Orme, informing the Board of the condition of Los Angeles at the present time. The telegram read: "Not a case of smallpox in the city except two in hospital."

A telegram was also received from Dr. T. L. Magee, Health Officer at San Diego, which read: "Dr. Hillery reports a case of smallpox at Linda Vista, in the Mosher family." The telegrams were ordered on file.

The Secretary then read a communication from Deputy Collector of Customs at Yuma, offering to coöperate with the Board, and informing it that Dr. De Corse was duly appointed Inspector or Quarantine Officer at that city. The letter was ordered answered and placed on file.

A communication was also received from John Eitel, of Sacramento, appertaining to the sanitary care of rivers and the destruction by fire of all garbage and refuse matter, which was ordered placed on file.

A letter was also read from the Chief Signal Officer, asking for a set of our biennial reports, which was, on motion, granted and a set ordered to be furnished his office.

The Secretary then read the following report of the result of his conference with the railroad officials, as directed at the last meeting of the Board:

In accordance with instructions, your Secretary proceeded to San Francisco and there called upon J. A. Fillmore and R. H. Pratt, Superintendent and Assistant Superintendent of the Southern Pacific Railroad Company, and explained to them the situation and the urgent necessity that existed of guarding the avenues of egress which their roads had opened from Los Angeles to the transportation of smallpox. These gentlemen were very courteous, and expressed their willingness to do anything in their power to prevent the spread of smallpox in our State, and fully agreed with this Board as to the necessity of placing Medical Inspectors on the trains leav-

ing the infected district. They offered free transportation to our appointees if we would go south and attend to the details. Accordingly I submitted to Drs. Cole, Crowder, and Simpson the result of our conference, and suggested that they would go south with me, meet Dr. Orme, our President, and take what action might be necessary as a Board with power to act. Such action being deemed prudent, Drs. Cole, Crowder, and your Secretary left San Francisco for Los Angeles and the southern frontier, April 12, 1887. We arrived in Los Angeles on the thirteenth, when we were joined by Dr. H. S. Orme, President of the Board. It being the Sabbath day, we were driven round the city to take into consideration its topography, water supply, drainage, sewerage, and general sanitary condition, and as to how and where the cases of smallpox were quarantined. We also viewed the smallpox hospital and grounds, which were considered quite inadequate for the purpose designed, or for the wants of a large city like Los Angeles.

On Monday, April thirteenth, a quorum being present, the State Board of Health held a special meeting, at which were present W. H. Workman, Mayor of the city of Los Angeles, Supervisor Rowan, Health Officer Dr. M. Hagan, Dr. J. S. Baker, ex-Health Officer, Drs. Turner, Kuntz, and Ross.

After hearing the statements of Mayor Workman, Health Officer M. Hagan, Drs. Baker, Turner, and others, relative to the prevalence of smallpox, and the means taken for its suppression, Dr. Orme stated that up to that time they had thirty-three cases in the city, had them all quarantined, but thought that more vigorous measures ought to be taken at once with a view to "stamping out" the disease.

The Board of Health of Los Angeles consisted of the Mayor, the President of the Council, and three Councilmen, the Health Officer being an ex officio member.

After a prolonged discussion among the members of the State Board of Health, it was resolved that the following recommendations be tendered to the Mayor and Council, as the advice of the State Board of Health:

First—We recommend that a special Board of Health be appointed, consisting of the Mayor and four qualified physicians, who shall take sanitary charge of the city, and be invested with full powers in the present emergency.

Second—It being indisputably necessary that all cases of contagious disease shall be immediately reported to the Health Officer, we recommend that a neglect to perform this duty, upon the part of the attending physician, hotel keeper, lodging house keeper, or head of the family, shall be deemed a misdemeanor, and punished by fine, imprisonment, or both.

Third—The State Board of Health recommended universal vaccination and revaccination as often as an epidemic of smallpox is threatened, and that no child be permitted to attend the public schools who does not present a certificate of successful vaccination within five years, signed by a legally qualified physician. We further recommend that the city be immediately districted, and a duly qualified vaccinator be appointed to each district, whose duty it shall be to make a house to house inspection and vaccinate all who are unprotected.

Fourth—We recommend that a building be erected for the detention of all persons who have been exposed to the action of smallpox, or are suspected of having the disease, who shall be detained for not less than twelve days, or until the disease has manifested itself unmistakably.

Fifth—That in all deaths from contagious disease, public funerals be prohibited, and that all persons dying of contagious diseases be disinfected before or at the time of burial, and that interment be made as soon as practicable.

Sixth—That we recommend that an ordinance be passed making it a misdemeanor, punishable by fine, imprisonment, or both, for any hackman, driver, or owner of a public vehicle, to convey any person or persons sick with any contagious or infectious disease.

Seventh—We recommend that all persons suffering from smallpox in any hotel, lodging house, boarding house, or other tenement occupied by more than one family, shall be promptly removed to the smallpox hospital, and, when necessary, sufficient force shall be employed for that purpose.

Meeting now adjourned until 7:30 P. M.

Adjourned meeting held in rooms of Board of Trade at 7:30 p. m. The Board of Trade and City Council being present, Dr. R. Beverly Cole, in his usual masterly style and impressive manner, presented the recommendations of the State Board of Health, and offered them as the opinion of the Board, being the advisory Board of the State on matters concerning its sanitary interests. He explained most lucidly our purpose to the gentlemen present, and that as an advisory Board we could only recommend, our main object being the prevention of the spread of the disease beyond its present limitations. A mistaken notion had arisen that our visit was for the purpose of quarantining Los Angeles, which he assured the Council we had no power to do, neither did we express any such intention.

Dr. Jas. Simpson then addressed the meeting, and in eloquent terms assured the Council that the desire of our Board was to coöperate with the city authorities in taking the speediest methods of stamping out the disease and preventing its spreading throughout the State.

The Mayor and gentlemen present having thanked us for our interest in the welfare of the city, and promising to adopt our advice, the meeting of the Board adjourned.

March sixteenth, Doctors Orme, Crowder, Cole, and your Secretary went to San Diego, arriving in that city on the morning of March seventeenth. We learned that one case of smallpox had been discovered, in the person of a woman who had come from El Paso, Texas. She died in a few days, and no new case had developed at the time of our arrival. We visited the smallpox hospital, which is admirably situated on the "mesa," or tableland, above the city, and away from all possibility of infecting others, being isolated and capable of thorough ventilation. It was unoccupied except by the husband of the deceased woman referred to. He was in good health and detained as a precautionary measure until all possible danger from him had passed. At this city we engaged the services of Dr. T. L. Magee to board all trains and ships coming into San Diego, and gave him a copy of instructions for his guidance.

Returning to Colton we learned that there was no smallpox there, but at this point roads coming from the East intersect. We placed there two Inspectors, Dr. Jas. J. Choate and Dr. C. B. Brierly, who would run on alternate days, one to Indio and inspect the Southern Pacific trains, the other to Barstow and inspect the California Southern trains. We also commissioned Dr. M. F. Price, of Colton, as consulting physician, in case either Inspector needed his services.

We next visited San Pedro and Wilmington, and as this is a port of ingress from Mexico, and departure from Los Angeles, we placed Dr. W. A. Weldon here, whose duty will be to inspect all trains and ships arriving and departing.

Returning to Los Angeles we appointed Dr. Q. J. Rowley a Medical Inspector, and stationed him at Mojave to inspect all trains arriving from Los Angeles and the East. Learning, however, that two trains passed Mojave at midnight, and not wishing to disturb the passengers at that unseasonable hour, we appointed Dr. H. J. Bordé an Inspector and stationed him at Tulare City with orders to inspect the trains that passed Mojave without scrutiny. We thus placed a cordon of Inspectors embracing all points through which contagious disease might find its way into the interior of the State.

The following is a copy of instructions given to each Inspector, and posted at each station where our Inspectors are employed:

STATE BOARD OF HEALTH.

Instructions to Medical Inspectors for State Board of Health.

— — —, M.D.:

DEAR SIR: You are hereby appointed Medical Inspector for the State Board of Health for the district between — — —, and the following general rules are published for your guidance:

You will take a convenient position at your assigned station and inspect the emigrant cars on their arrival, at the same time making inquiries of the passengers as to the existence of any sickness on board at the time, or as to there having been any eruptive form of disease among them since leaving — — —. In this investigation valuable information may be obtained from the conductor and other employes of the train.

Should any case of smallpox be discovered upon any car, you will direct said car to be quarantined, or sidetracked, at a point suited to the well-being and comfort of the sick, and at the same time adapted to the convenience of the railroad company. It is desired that the work to be done should be so ordered and conducted as to subject the company to the minimum of inconvenience consistent with its energetic and efficient discharge in the interest of public health.

The other passengers on infected cars should be transferred to another car, but not mixed with passengers on uninfected cars. You will examine them carefully to ascertain whether there are any unvaccinated persons among them. All such should be immediately vaccinated, making at least two points of insertion. You will also vaccinate all upon the infected car, and detain them for a period of twelve days from the date of their exposure to the disease.

You will also inspect the express trains, and satisfy yourself that no cases of smallpox were on board. In this examination the conductor and other employes of the cars will be of essential service to you. Should you be satisfied of the presence of smallpox, you will adopt the means just recommended for emigrant cars.

If, upon inquiry, you find that any passenger upon a car has been sick with smallpox during the trip, and has died or been removed from the car, you will consider such car to be infected, and proceed therewith in the manner directed for cars upon which smallpox has actually been discovered.

When any car containing smallpox has been quarantined, you will aid the railroad authorities in seeing that the passengers thereon are well and comfortably cared for, and that the car, after the recovery or removal of the sick, is thoroughly disinfected, according to the rules laid down in the general instructions for disinfection issued by the State Board of Health.

You will be expected to keep a record of cars quarantined, cases of smallpox discovered, and vaccinations and revaccinations performed, and of every other proceeding under the duties assigned you, and to report the same in writing to the Secretary of the State Board of Health at Sacramento at least every third day.

The duties to which you are assigned are important yet delicate, and the State Board of Health trusts to your discretion and good judgment so that they be exercised with prudence, and with an endeavor to disarm opposition by a courteous and dignified appeal to reason, and the demonstration of the necessity of the measures adopted, rather than by the exhibition of arbitrary authority.

By order of the State Board of Health.

G. G. TYRRELL, M.D.,
Secretary State Board of Health, Sacramento.

On motion of Dr. J. M. Briceland the report was received, the action of the Board concurred in, and the proceedings ordered spread upon the minutes.

The Secretary informed the Board that the Inspectors appointed were doing their duty nobly and faithfully, and that so far no cases of contagious or infectious disease had passed their stations.

Dr. Orme stated that on April eighth he had received an urgent request from the City Trustees and the Health Officer, Dr. Magee, that he would visit San Diego officially, to give his advice and opinion on some cases of a doubtful nature, which the Health Officer had removed to the Smallpox Hospital. Dr. Orme immediately responded, and found six cases of well marked smallpox in the hospital, confirming Dr. Magee's opinion, and establishing his correctness as a diagnostician and his prudence as a health officer.

In the evening a meeting of the City Trustees was held, and expressions of thanks were tendered to Dr. Orme and the State Board of Health, and

resolutions appreciative of its efforts to assist the authorities in "stamping out" smallpox were passed.

After a full discussion of the present situation regarding smallpox, it was, on motion of Dr. J. M. Briceland—

Resolved, That if no new cases of smallpox developed between this time and the first of May next, our Secretary be instructed to discharge from duty our Medical Inspectors until such time as their services may again be required. We, however, deem it prudent to retain Dr. T. L. Magee on duty until the danger to San Diego has passed.

Carried.

Resolved, That the State Board of Health deprecate the attempts of a minor portion of the press in Southern California, and more especially of Los Angeles, to belittle the work of the State Board of Health, in attributing its efforts to suppress disease to any sectional feeling or desire to injure the southern part of the State, as this Board expends its efforts for the good of the whole State, and not for any particular part thereof.

Dr. Orme stated to the Board that Colonel George E. Waring was on the coast, and congratulated the City of San Diego for its enterprise in having a system of sewerage designed and executed by so eminent a sanitary engineer, and hoped that other cities interested in the welfare of their inhabitants would take the opportunity of Colonel Waring's visit to California to enlist his services in the carrying out of a perfect system of sewerage and drainage wherever needed.

There being no further business before the Board, on motion, it adjourned.

G. G. TYRRELL,
Permanent Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH,

Was held in the office of the Secretary, July 22, 1887, at the usual hour.

Present—Dr. H. S. Orme, President; Dr. Tyrrell, Secretary; Dr. W. R. Cluness, Dr. J. M. Briceland, Dr. H. C. Crowder.

The minutes of the last meeting having been read and approved, the Secretary read a communication from Dr. James Simpson, explaining his inability to attend the meeting owing to indisposition, and promising to report the status of smallpox in San Francisco to date.

A letter was also read from Professor R. Beverly Cole, dated from Calistoga, explaining his absence, and expressing his regrets at his unavoidable detention.

The Secretary then read a communication from Surgeon-General Hamilton, notifying the Board that in compliance with its request he had appointed Inspectors at Yuma and Nogales to guard against the approach of contagious disease at these points.

A communication was read from Dr. De Corse, Health Inspector at Yuma, giving information relative to smallpox on the border, and the precautions taken to prevent its entrance into California, which was ordered placed on file.

A communication from Dr. Crepin, Health Officer at Tucson, was also read, giving an account of the progress of smallpox in that city, which was also ordered on file.

The Secretary stated that he had received an answer to a dispatch sent to Dr. Walsh, regarding smallpox in Irvington. Dr. Walsh stated that there were three cases there in one family, and, in accordance with instructions from this Board, has placed a quarantine upon the house and isolated the family.

A case of smallpox was also reported in Oakland, which the Health Officer had in charge.

The Secretary informed the Board that he had telegraphed to Dr. J. L. Meares, the Health Officer of San Francisco, of the meeting of the Board this evening, with the request that he telegraph the number of cases of smallpox that had been reported in San Francisco since its outbreak three weeks ago. No answer had been received, and he was therefore unable to inform the Board to-night. Smallpox is, however, in San Francisco, and slowly spreading among the unvaccinated.

A communication was read from the Lick Paper Company, relative to an open sewer running past the Asylum for the Chronic Insane and their mill, and asking the action of the State Board in having the nuisance abated.

The Secretary informed the Board that he had replied to the communication and pointed out the course to be pursued by the mill company.

The letter was ordered placed on file, and the Secretary's course approved.

The Secretary then informed the Board, that for the past two sessions of the Legislature the Board had received a great deal of legal advice and clerical work performed in drawing bills relative to the laws of health from Hon. E. W. Maslin, who had received no compensation therefor, and thought the matter ought to be settled at once, as advice is occasionally needed in the interest of the Board.

Dr. Orme moved that the sum \$100 be drawn from the appropriation for the expenses of the Board and awarded to Mr. Maslin for legal services, and the Secretary be instructed to charge same among regular expenses when sending in his monthly expenditures to the Board of Examiners, which was carried unanimously.

The Secretary called attention to the necessity of rearranging the standing committees before commencing work on the next biennial report. It was therefore, on motion of Dr. Cluness—

Resolved, That the Secretary rearrange the committees, and present the same at the next regular meeting of the Board.

On motion:

Resolved, That any member of the State Board of Health who can attend the meeting of the National Conference of State Boards of Health and American Public Health Association, is hereby appointed a delegate, and that the Secretary furnish such member credentials as representative of this Board.

Which was carried.

Dr. Orme then read his report upon the epidemic of smallpox in Los Angeles, which occurred in this year. A synopsis of the report shows that the first cases were reported February 16, 1887. Next day four other cases were discovered, one of these at South Pasadena. Three others were added on the eighteenth; another on the nineteenth, making in all ten cases since the sixteenth of February. All of these cases were in young men, which, taken with the fact of their being almost simultaneously affected, would indicate a common source of infection. Investigation confirmed this theory, as it was proved that all of these young men were in the habit of frequenting a certain theater in the city where it is supposed that the infection was introduced by the clothing of some visiting Mexicans, smallpox being known to have existed in Mexico at that time. Of the ten cases, one died at South Pasadena on February twentieth, and four more in the city on the twenty-second. As a sequence, a city crowded with thousands of health and pleasure seekers, was on the verge of a panic. Reports now began to come in from other localities. In Lugo settlement, Downey, Elsinore, Ravenna, Bal-

lona, and Green Meadows cases developed. It reached San Diego, and down to Ensenada, on the Gulf of California.

The prevalence of smallpox continued from the sixteenth day of February to June, 1887. During that time one hundred and twenty cases occurred in Los Angeles, with fifteen deaths. In the County of Los Angeles there were fifty-six cases, with six deaths. In San Diego there were twelve cases, with two deaths. In Elsinore there were three cases and two deaths. In Ontario there were two cases, in Ventura two cases: making a grand total of one hundred and ninety-six cases and twenty-five deaths. The mortality was about 12½ per cent, which is much less than usually observed in epidemics of this kind. A noticeable fact is the general absence of the usual disfiguration, very few cases showing any trace of pitting, on recovery from the disease, which indicated its generally mild character. Los Angeles, at the time of the invasion, was crowded with strangers, and it is estimated that at least ten thousand people fled from the city, to avoid contagion. This was, in a great measure, owing to the San Francisco and other papers exaggerating the extent of the epidemic, and the action of the local papers in trying to conceal the fact that smallpox existed. Dr. Orme, at the very outset of the epidemic, addressed a letter to the Supervisors, advising them of the presence of the disease, and of the remedial measures to be adopted, offering the services of the State Board of Health in endeavoring to allay the excitement and exterminating the disease. Accepting Dr. Orme's suggestions, the State Board of Health had circulars printed, upon the management of smallpox, and distributed throughout the city and county. Dr. Orme personally superintended the appointment of efficient and competent physicians to act in the emergency. The disease becoming still more formidable, the President deemed it his duty to call the State Board of Health together for consultation, which met, and, in conference with the Mayor and City Council, gave such recommendations as seemed to them to be adapted to the occasion. It was also decided to consult with the railroad authorities, and place medical inspectors along the route of travel, to prevent the disease extending through the State. The report then narrates the different means adopted in this city, the placing of the sick under the charge and care of the Sisters of Charity, etc., and gives the expenses of the four months during which the epidemic existed as \$18,000 for the city, and \$21,000 for the county, and incidentally, he says, many more thousands must be added to our expenses. In fact, says the report, nothing could be done in connection with the disease that did not cost a fabulous price. In conclusion, the doctor notices the extreme bitterness of the Los Angeles press upon the event of the State Board's visit to that city, and condemns its unnecessary hostility on that occasion.

On motion of Dr. Briceland, the report was accepted and ordered printed in the next biennial report of the Board in extenso.

There being no further business before the meeting, it, on motion, adjourned.

G. G. TYRRELL,
Permanent Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH,

Was held in the office of the Board, October 15, 1887.

Present—Dr. H. S. Orme, President; G. G. Tyrrell, Secretary; Drs. Simpson, R. B. Cole, H. C. Crowder, and J. M. Briceland. Absent—Dr. W. R. Cluness, who was absent from the city.

The minutes of the last meeting having been read and approved, a communication was read from the editor of the "Sanitary News," and ordered placed on file.

A bill for \$2 subscription to the "Sanitary News" was presented and ordered paid.

The Secretary then read a communication from Dr. C. A. Lindsley, Secretary of National Conference of State Boards of Health, announcing an assessment of \$5 on each State Board of Health, to defray expenses of Conference, which, on motion of Dr. H. C. Crowder, was received, and the assessment ordered paid.

The following communication was received from the National Conference of State Boards of Health:

SECRETARY'S OFFICE, NEW HAVEN, CONN.,
September 17, 1887. }

DEAR SIR: At the session of the National Conference of State Boards of Health, held in Washington September 8, 1887, the Committee on Interstate Notification made the following report:

Report to the International Conference of State Boards re Notification of Infectious Disease.

Your committee begs leave to report the following resolutions:

Resolved, 1. That the Conference reaffirms the principles contained in the resolutions adopted by it at its meeting in Toronto, 1886.

2. That those communicable diseases hereinafter mentioned, prevalent in certain areas, or which tend to spread along certain lines of travel, be reported to all State and Provincial Boards within said area or along said lines of communication.

3. That in the instances of smallpox, yellow fever, cholera, and typhus reports be at once forwarded, either by mail or telegraph, as the urgency of the case may demand; and, further, that in the instances of diphtheria, scarlet fever, typhoid fever, anthrax or glanders, weekly reports where possible be supplied, in which shall be indicated, as far as known, the places implicated and the degree of prevalence.

All of which is respectfully submitted.

PETER H. BOYCE,
HENRY B. BAKER,
J. BERRIAN LINDSLEY,
BENJ. LEE,
J. F. REEVES,
E. M. HUNT,
Committee.

The report having been read, it was voted that the vote on its adoption be taken by States. The vote, being so taken, was unanimous in its favor, by all the States and Provinces represented by delegates present.

The following resolution, offered by Dr. Reeves, of Wisconsin, and amended by Dr. Lee, of Philadelphia, was adopted:

Resolved, That the Secretary of this Conference be requested to send copies of the resolution on Interstate Notification of Contagious Diseases to the executive officers of all Boards of Health belonging to this Conference, and to request from each of such Boards as are not represented here a vote upon the same, for record as an appendix to the minutes of this meeting.

If your State was not represented by a vote at the Conference, will you please inform the undersigned of the vote of your Board, in compliance with the last resolution, at your earliest convenience.

Very respectfully,

C. A. LINDSLEY,
Secretary of the Conference.

On motion of Dr. R. Beverly Cole, it was regretted that this Board was not represented at the last Conference of State Boards of Health, and that we are heartily in sympathy with the spirit of the resolution offered, and desire to record the vote of this Board in the affirmative, which was carried unanimously.

The Secretary presented and read a communication from Mr. Richard Gray, General Superintendent Freight Department, Southern Pacific Railroad Company, asking the Secretary of this Board to telegraph Dr. R. Rutherford, Health Officer of Houston, Texas, that this coast was free from

cholera, and that the quarantine placed on fruit coming from this State was unnecessary on the part of the State Board of Health of Texas.

The Secretary informed the Board that he had answered this communication, and sent a copy of the following dispatch:

OCTOBER 6, 1887.

Dr. R. RUTHERFORD, State Board of Health, Houston, Texas:

If your quarantine of fruit includes California, it is wholly unnecessary, as no cholera has existed in this State for thirty years. Please answer.

G. G. TYRRELL,
Secretary California State Board of Health.

To which Dr. Rutherford sent the following reply:

To G. G. TYRRELL, Secretary California State Board of Health:

Fruit from California not quarantined, only it must be accompanied by affidavit, so that I may know that it is from California.

HOUSTON, TEXAS.

R. RUTHERFORD,
Secretary Texas State Board of Health.

He had also telegraphed to Mr. Gray the result of his action, which seems to be satisfactory to the railroad company.

On motion, the action of the Secretary was indorsed and approved by the Board.

Dr. Simpson moved that the Secretary be authorized to enter into communication with the Southern Pacific Railroad Company, if necessary, and also Health Officer Rutherford, and take such action as he deems best for the interest of California under the various changing conditions that may arise appertaining to the question of interstate quarantine, which was carried.

Dr. R. Beverly Cole moved that the Secretary be authorized to have executed a new and appropriate seal for the use of the Board. Carried.

The Secretary having been appointed at the last meeting of the Board a committee to report upon changing the standing committees, reported that the committees heretofore organized by the Board are well adapted for the duties imposed upon them, and recommends that they be continued as heretofore, which, on motion of Dr. R. B. Cole, was accepted and the committees continued.

On motion of Dr. R. B. Cole, it was—

Resolved, That each member of this Board be requested to visit at least one of our public health resorts during the coming season, and prepare a report, based upon his observations and investigations, as to its sanitary condition.

Which was carried.

Dr. Simpson moved that the Secretary be requested to prepare a list of our public health resorts, and furnish a copy to each member of the Board, with a view of selecting the points he may find most convenient to visit; and upon the selection being made by a member, the Secretary is instructed to notify the proprietor or occupier that such a member is designated to visit and report upon the sanitary condition of the establishment; which was adopted unanimously.

Dr. H. S. Orme moved that the Secretary be requested to place himself in communication with Surgeon J. B. Hamilton, U. S. M. H. Service, notifying him that it is currently reported that smallpox, in a virulent form, prevails in the village of Tubac, between Nogales and Tucson, Arizona Territory, and that we deem it our duty to call his attention to the fact, with a view of his investigation of the same, and, if thought best, to renew the quarantine on the border to prevent its spread over the Territory, which was adopted.

The Secretary presented the monthly circular just published, which met the approval of the Board.

There being no further business, the meeting adjourned.

GERRARD G. TYRRELL,
Permanent Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

Was held in the office of the Secretary, January 5, 1888.

Present—Dr. H. S. Orme, President; G. G. Tyrrell, Secretary; Dr. W. R. Cluness, Dr. R. B. Cole, Dr. H. C. Crowder, Dr. J. M. Briceland, members, and Dr. C. A. Ruggles, Stockton, by invitation. Absent—Dr. Jas. Simpson, San Francisco.

The minutes of the last meeting having been read and approved, a communication was read from the National Conference of State Boards of Health in reference to questions for discussion at the next meeting of the Conference. Communication was received and ordered placed on file.

It was also moved that a committee of two members of this Board be appointed to represent this Board, and to formulate a question or questions to submit to the Conference of State Boards of Health, and that each member of this Board is hereby requested to send, within ten days from date, such questions to the committee as they would like to have considered by it, and that the action of this committee be accepted as the action of the Board, which was unanimously carried. The President appointed Dr. R. B. Cole and Dr. W. R. Cluness as that committee, the Secretary being ex officio a member.

A communication was received from the Board of Health of San Francisco asking the State Board of Health to aid it in "stamping out" small-pox, now prevalent in San Francisco, by appointing Inspectors on trains coming into the State, and out of San Francisco, to prevent the spread of the disease, which, on motion, was read and placed on file.

A communication from the American Public Health Association was read, asking a contribution of \$5 as dues to the Association, which, on motion, was authorized to be paid by the Secretary.

A communication from Dr. Lindsley, Secretary of Conference of State Board of Health, inclosing a form of notification of infectious disease, was read, and on motion of Dr. H. C. Crowder, it was resolved that the Secretary is instructed to have a somewhat similar form printed for the use of this Board, and that the Secretary be requested to notify other States of the presence of a limited number of cases of smallpox in California, which was carried.

On motion of Dr. R. B. Cole, the Secretary was instructed to have one thousand copies of a circular printed, intended as a guide in the formation of local Boards of Health, for Supervisors, Trustees, or Councilmen, and also defining the duties of Health Officer of the same, which was carried.

A letter from Dr. Probst, Secretary of the State Board of Health of Ohio, was read, inquiring how many copies of the proceedings of the Conference of the State Boards of Health will be required by this Board. After some discussion, it was, on motion of Dr. J. M. Briceland—

Resolved, That this Board order three hundred copies of the publisher for distribution, and that a copy be sent to each of the correspondents of this Board, and to every Board of Health in the State.

Which was carried.

Dr. Cluness moved that twenty thousand copies of the Board's circular on smallpox be reprinted, with whatever additional remarks on vaccination that the Secretary may deem suitable at this time, which was carried.

The Secretary stated that at the request of the President he had addressed an official communication to the Board of Supervisors of Los Angeles County, asking them to appoint a Health Officer for the town of San Pedro, or Port of Wilmington, information having been received that the sanitary condition of that town was in such a deplorable state as to foster and propagate infectious or contagious disease if such should be developed. The Supervisors in their reply stated they would give the matter their earliest attention.

On motion, the action of the Secretary in this matter was indorsed and approved.

The Secretary reported that on December 14, 1887, he had visited Truckee, Nevada County, officially, to examine into the cause of the frequency of typhoid fever in that town, especially among young girls, and discovered that the privies attached to the school house where the children went were in a most insanitary condition, the department used by the girls being devoid of ventilation, except through a hole at the back of the seat, which carried the polluted air right under the children as they sat down, and out into the closet. This privy had been used by a child suffering from typhoid fever.

On motion, the Secretary was ordered to elaborate this report when making his biennial report to the Board. Carried.

The Secretary read the following communication from the Board on "Vaccination," which was ordered spread upon the minutes:

VACCINATION.

A Timely Warning from the State Board of Health.

The State Board of Health, being advised of the gradual progress of smallpox in several parts of the State, deems it its duty to warn the public against delay in availing itself of the only known prophylactic against the disease, namely, vaccination. The supply of pure bovine virus upon the coast is now ample, its use is almost perfectly devoid of danger, and its protective power to guard the system against the invasion of smallpox is unquestioned; if in a few isolated instances, through some peculiarity of constitution, smallpox is contracted after successful vaccination, the disease is modified or rendered so mild as to be comparatively without danger. From the fact that this State has been free from smallpox for so many years there is necessarily a large number of persons in our midst who are susceptible to the disease. Once smallpox is fairly started this fresh food for its maintenance is sufficient to render the disease epidemic in many places and the loss of valuable lives a certainty. To say nothing of this, its humanitarian aspect, the monetary loss an epidemic would cause our citizens and the injury it would produce in the brilliant prospects of our State is beyond computation.

These dire but positive results can all be avoided, death averted, and perfect safety assured by efficient vaccination.

The Board advises, therefore, immediate action. Let competent physicians be appointed in every city and town in the State as public vaccinators, and if necessary offer this God-given boon free to all. There is no city, town, or hamlet that can, for pecuniary consideration, afford to harbor a single nidus for smallpox when the means of prevention are so certain, so easy, and so positively effectual.

H. S. ORME, M.D.,

President.

G. G. TYRRELL, M.D.,

Secretary California State Board of Health.

The Secretary read a communication from the German Vice-Consul, relative to the death of a person, a certificate of which was required to establish his identity. This was read for the purpose of showing the necessity of having our statistics and registration of deaths rendered as nearly correct as possible, which can only be done by changing the law so as to make registry by County Recorders compulsory.

On motion, it was—

Resolved, That the Committee on Legislation be instructed at the next meeting of the Legislature to attend to this matter, and use all legitimate means to have our present laws changed so as to make them efficacious.

The Secretary reported the appearance of smallpox in Sierra City and Sierra Valley; also one case in North Bloomfield, Nevada County; one in Redding, Shasta County; one in Cloverdale, one in Healdsburg, two in Olema, Marin County; one in Lake County, two in Stockton, two in Solano County, several in Oakland, and eighty-six in San Francisco, up to January 1, 1888.

A communication was read from Governor Waterman, authorizing the Board to adopt whatever means were necessary to arrest the spread of contagious disease, which, on motion, was read and placed on file.

Dr. Cluness moved, which was seconded by Dr. Briceland, that in view of the prevalence of smallpox, the Secretary be instructed to communicate with the Supervisors of every county throughout the State, and urge upon them the necessity of establishing local Boards of Health in their districts and instruct them as to the best methods of preventing smallpox, by forwarding to them official circular pamphlets appertaining to the disease, and issued by the Board; which was unanimously carried.

A communication from the Health Department of San Francisco, requesting the appointment of Inspectors, being the next subject under discussion, the question arose as to the benefit to be derived by appointing Inspectors, the disease being already in the State. Dr. R. B. Cole was of the opinion that we could not arrest the spread of smallpox by inspecting trains, as persons afflicted, but on whose person the disease had not shown any outward signs, could not be detected in the short time consumed in traveling from San Francisco to any part of the State, and therefore was opposed to placing Inspectors on the trains.

Dr. Cluness differed from Dr. Cole. He thought the effect would be good; in the first place, by giving confidence to the public that every precaution was taken to insure their safe travel, and again, it would prevent the travel of any with the disease broken out on them. If such attempted to travel, as we know they do, and without any inspection of the trains, such sources of contagion might be allowed to infect every susceptible person on the train without hindrance. Therefore, as a measure of precaution, and for the moral effect it would have upon the traveling public, he would move that an Inspector be appointed for Tulare, San Pedro, Santa Barbara, San Diego, and Truckee, which, being ably seconded by Dr. J. M. Briceland in a convincing speech, was carried: Dr. Cole voting "No."

Dr. Cluness thought that these Inspectors should be requested to impress upon the community among whom they were placed the fact that vaccination and revaccination alone can be relied upon for protection against smallpox, and that they coöperate with the local authorities in the endeavor to prevent the advent or the spread of the disease.

It was moved by Dr. R. B. Cole, and seconded by Dr. Cluness, that the Inspectors be paid a salary not exceeding \$100 a month, which, after some discussion, was carried.

It was moved by Dr. R. B. Cole that the Secretary be authorized to supply the representatives of this Board with bovine virus without charge, and also local Boards of Health, upon evidence of their inability to furnish the same at their own expense, which was carried.

When upon the subject of the reliability of virus, Dr. Cluness desired to say that, in his opinion, the utility of bovine was much exaggerated; that

he did not believe one third of the virus used had any protective power whatever, and that not one quarter of those vaccinated took; whereas ninety-nine out of one hundred vaccinated with fresh humanized virus gave the characteristic result in a perfect vesicle. He did not believe that humanized lymph, taken on the eighth day and before inflammatory products had appeared, was capable of producing any disease in the human body; and, for himself, would just as soon be vaccinated with the lymph taken from a patient the victim of leprosy as any other, provided it was taken when in the proper stage and manner. He strongly advocated the use of humanized lymph in preference to bovine, when possible to procure it.

The assertion of Dr. Cluness gave rise to quite an animated discussion on the merits and demerits of bovine virus, the majority being inclined to prefer the bovine when reliable, although agreeing that it was not so successful in producing the characteristic vesicle as humanized virus in as many cases operated upon.

Dr. R. B. Cole moved that the Secretary be authorized to communicate with the Representatives of California in Washington, and that they urge the passage of the bill prepared by this Board to establish a quarantine station in the Bay of San Francisco, and that his Excellency Governor Waterman be requested to send a communication indorsing the same to our Senators and Congressmen, which was carried.

There being no further business, on motion of Dr. Briceland, the meeting adjourned.

GERRARD G. TYRRELL,
Secretary.

THE REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

Was held in the office of the Secretary, April 16, 1888.

Present—Dr. Orme, President; Dr. Tyrrell, Secretary; Dr. Briceland, Dr. Cluness, Dr. C. A. Ruggles.

The minutes of the last meeting having been read and approved, Dr. C. A. Ruggles, appointed to fill the vacancy caused by the expiration of the term of office of Dr. H. C. Crowder, presented his credentials and was welcomed to a seat at the Board.

Dr. H. S. Orme, Dr. W. R. Cluness, and Dr. J. M. Briceland, having been reappointed members of the Board, vice themselves, presented their qualifications and took their seats.

The Board then reorganized by electing Dr. W. R. Cluness, President pro tem., and Dr. Tyrrell, Secretary pro tem.

Dr. Briceland nominated Dr. H. S. Orme as President of the Board, which was seconded by Dr. C. A. Ruggles, and he was unanimously reelected.

Dr. C. A. Ruggles nominated Dr. G. G. Tyrrell as Secretary of the Board, and he was unanimously reelected.

The following committees were then appointed, subject to such changes as may be deemed necessary hereafter:

1. On the Salubrity of Public Institutions, Schools, Hospitals, Prisons, Factories, etc.—Doctors Cole, Orme, and Simpson.
2. On Statistics relating to Life and Health, Modes of Employment, and of Living, and the Comparative Healthfulness of different localities—Doctors Cluness, Briceland, and Tyrrell.
3. On Intoxicating Liquors, Inebriate Asylums, Pathological Influence of Alcohol, etc.—Doctors Simpson, Cole, and Ruggles.
4. On Influence of Irrigation, Tree Planting, etc.—Doctors Ruggles, Orme, and Cluness.
5. On Legislative Business—Doctors Briceland, Orme, and Tyrrell.

On these committees the Secretary of the Board is ex officio a member.

The Secretary reported that he had notified the Supervisors of every county in the State of the necessity that existed for the establishment of local Boards of Health and Health Officers, and had sent them circulars of instruction for that purpose.

On motion, the action of the Secretary was approved.

The Secretary also reported that in accordance with instructions, Inspectors had been appointed in San Diego, San Pedro, Santa Barbara, and Tulare, with orders to inspect all steamers and trains going south, to guard as far as possible against the transportation of smallpox by either. An Inspector was not appointed for Truckee, as the county authorities had appointed Hon. G. W. Griffin, of that place, for similar purpose. The Inspectors were paid \$100 per month, and employed until March first, when the necessity for their appointment having ceased, they were relieved from duty until further orders, by order of the President.

On motion, the action of the President and Secretary was approved.

The Secretary reported that he had supplied the Inspectors with bovine virus to the extent of \$164 worth, which action, on motion, was approved.

The Secretary reported that he had issued a circular letter to the members of Congress in both houses regarding the quarantine bill introduced by Senator Stanford, and had received very favorable replies from many.

A communication was read from Dr. Edwards, of Philadelphia, asking our Board for its support in the publication of the "Annals of Hygiene."

On motion of Dr. Briceland, the Secretary was instructed to subscribe for seven copies of the "Annals" for one year.

A communication was received from the New Hampshire State Board of Health, asking the support of our Board by instructing our Representatives in Congress to favor the formation of a Bureau of Health.

On motion, the communication was received and placed on file for further consideration.

On motion—

Resolved, That the thanks of this Board be returned to our Representatives in Congress for their earnest efforts in behalf of this coast in the advocacy of the bill in relation to quarantine, introduced by Senator Stanford and drawn by this Board.

Which was carried.

Communication was received from Mr. Rudolph Hering, which was ordered placed on file, and the Secretary requested to ask a report upon the subject of sewerage for our biennial report, especially in relation to the City of Los Angeles, upon which Mr. Hering has already made a survey.

Dr. H. Dubois, of San Rafael, sent a communication asking the coöperation of the Board in the establishing of a reliable vaccine station in San Rafael.

Dr. C. A. Ruggles stated that in his experience, where he required quick and sure work, he relied upon humanized virus above all others. With bovine virus his failures amounted to over 35 per cent; whereas, with the humanized lymph, the failures were not even 10 per cent. He believed that sometimes bovine virus was not pure, being not unfrequently mixed with blood, and perhaps other extraneous matters. As far as the San Rafael virus is concerned he had tried it, but found it failed every time.

On motion of Dr. Cluness, it was—

Resolved, That the Pacific Coast Vaccine Station should be encouraged, and toward that end the members of this Board promise to give it a fair and impartial trial.

Which, after some discussion, was carried.

The Secretary read a communication which he had forwarded to the

"Sanitary News," giving a summary of the work of the Board up to the present time, which, on motion, was approved.

At the last meeting of the Board, the Secretary, Drs. Cole and Cluness were appointed a committee to prepare questions to be submitted to the National Conference of State Boards of Health, for consideration. In accordance therewith, the following questions were prepared and sent as proposed by the State Board of California:

a. Cannot a plan be devised to insure uniformity and increase of power in State Boards of Health by formulating, in conference, a draft of the extent of the increased powers desired in matters of quarantine, compulsory notification of contagious diseases, and other sanitary matters within each State, neglected or refused by local Boards, which formula may be expressed in a bill and laid before each State Legislature for passage?

b. What are the true characteristics of the vesicle in successful vaccination from bovine virus?

c. Can the cholera be communicated in any other manner than through the alimentary canal?

d. In the event of cholera reaching America, can it be prevented from becoming epidemic? If so, how?

Which, on motion, were approved as the action of the Board.

The Secretary read reports from the State Boards of Iowa, North Carolina, Illinois, Pennsylvania, Minnesota, Missouri, New York, Tennessee, Louisiana, Kansas, Wisconsin, and Massachusetts, announcing the appearance of smallpox in each of these States, which were ordered on file.

Dr. H. S. Orme, President of the Board, reported that he had officially visited Santa Barbara, Ventura, San Bernardino, and San Diego, for the purpose of giving such instructions as were needed to limit the extension of smallpox in these counties, and to advise with the local authorities as to their duties in providing for the quarantine of the sick and the protection of the people from contagion.

The Secretary reported that he had made official visits to Calaveras County and Watsonville, at the request of the authorities, to determine the nature of the diseases that prevailed in these sections of the country, and to give such advice as might be needed to quiet apprehension and arrest the progress of the maladies.

The actions of the President and Secretary were, on motion, approved.

Matters in relation to quarantine on the coast being under discussion, it was, on motion—

Resolved. That this Board do now adjourn to San Francisco, and invite the Board of Health of San Francisco to meet us in reference to coast quarantine, and the best means to be adopted to restrain the importation of smallpox through the Chinese immigration, both by sea and land.

Which was carried, and the meeting adjourned to meet in Dr. Simpson's office, Post Street, San Francisco, at 8:30 p. m., on April 17, 1888.

ADJOURNED MEETING OF THE STATE BOARD OF HEALTH,

Was held in the office of Dr. Jas. Simpson, April 17, 1888, at 8:30 p. m.

Present—Dr. H. S. Orme, Dr. G. G. Tyrrell, Dr. C. A. Ruggles, Dr. J. M. Briceland, Dr. R. B. Cole, Dr. Jas. Simpson, members of the State Board of Health, and Mayor Pond, Dr. Perry, Dr. McCarthy, Dr. Rosenstirn, of San Francisco Board of Health, and Dr. Barger, Health Officer of San Francisco.

A communication was read from the Board of Health of San Francisco tendering the use of the rooms of the Board of Health in the City Hall to the State Board whenever it decided to transact any of its business in

San Francisco, which, on motion, was received, placed on file, and the thanks of the Board returned to Mayor Pond and Board of Health.

Mayor Pond related his interview with Congressman W. W. Morrow, and was informed that the bill upon quarantine had been referred to the committee whose function it was to select such bills as were deemed most important to be acted upon. The bill was placed upon file for action, and Mr. Morrow was of the opinion that the bill will be brought up for consideration in a few weeks, with great probability of its passage by the House, and then he thinks there will be no trouble in getting it through the Senate.

Dr. R. B. Cole inquired if the number of bills ahead of the quarantine bill would not obstruct its passage.

The Mayor thought they would not, as Mr. Morrow was very energetic and would have the bill pushed to the front.

The Secretary then read for the gentlemen present the action of the State Board and the question proposed for the action of the Conference of State Boards of Health, as well as those proposed by other State Boards, in reference to quarantine, which were deemed important.

Dr. Simpson, in expressing his views upon the subject, was of the opinion that the State Board of Health should be represented at the meeting of the Conference, as it was most important that the urgency of a proper and efficient quarantine should be ably presented to the Conference.

Dr. R. Beverly Cole, recognizing the importance of having the State represented, inquired if there were no possible means of having ourselves represented.

The Secretary replied that the funds appropriated for the expenses of the Board were almost exhausted, and that not enough remained to send a delegate to Cincinnati and pay the current expenses of the Board.

Dr. R. B. Cole moved that—

WHEREAS, The regular appropriation for the use of the State Board of Health being insufficient to justify said Board in sending a representative or delegate to the National Conference of State Boards of Health, at their meeting in Cincinnati, May 4, 1888; be it

Resolved, That the Secretary be instructed to represent to the Governor the importance of this question, especially in the suppression of contagious and infectious diseases, in which this State is so deeply interested, and to request as the action of this Board, that he consent to the appropriation of a sufficient amount of the contagious disease fund to meet the actual expenses of sending a representative of this Board as a delegate to the National Conference of State Boards of Health, to be held in Cincinnati, May 4, 1888.

Dr. Briceland, while in perfect accord with the spirit of the motion, and fully impressed with the desirability of our Board being represented in matters of such vital importance to the State, was very doubtful of the manner in which our Legislature would view our action. It is a very hard matter to convince the modern legislator that money ought to be appropriated for such purpose. When we seek for a continuance of the appropriation next winter, we should have no record that could in any manner prejudice the Legislature against us.

Dr. Rosenstirn, of San Francisco Board of Health, remarked that this subject is not only important in regard to this State, but of national importance, and comes right under the very head for which this money was appropriated, for certainly the prevention of disease coming to the coast was the main object for which this money was designed. This Conference meets for discussing the best means whereby disease may be prevented, and without coöperation we will accomplish but little.

Dr. R. B. Cole could not see the application of Dr. Briceland's remarks; the principal object we have is to inform ourselves as to the best means to be adopted to suppress epidemic diseases, and except we ascertain and interchange views upon the subject we cannot possibly act with that degree

of knowledge which is required of us: he thought it quite within the province of our duty to get all the information possible, and considered the use of the money appropriated for that purpose would be legitimately and correctly used in having ourselves represented at the Conference.

Dr. Jas. Simpson thought that Dr. Briceland spoke as a legislator, and was quite right in his remarks so far, but the progress of science was now so far advanced that the legislator could not but see that the importance of the subject demanded the utmost vigilance, and that we should use every means at our command to be thoroughly equipped against the invasion of pestilence to our shores.

Mayor Pond having at this time to retire, begged to assure the State Board of Health that the City Board would gladly coöperate with it in any means that might be desired to arrest the influx of disease from China, South America, Japan, or Mexico, and begged to assure the State Board that he was in perfect accord with it, and would be glad to have it use his offices whenever assembled for discussion of sanitary business.

Dr. Briceland was sorry to think Dr. Cole was at variance with his views, but when they come in contact with the average legislator, he would find it quite different. It is important that we should make plain our motives under which we act, as we must have another appropriation: it has become a necessity, and if we do anything to antagonize the Legislature, we will get nothing. He, as said before, was in full accord with the resolution, but begged we would do nothing that could place us in a false position before the Legislature.

Dr. Perry, of San Francisco Board of Health, agreed with Dr. Briceland, and did not know what we would accomplish by sending a delegate to the Conference, except by informing it what we might have to say upon Chinese immigration, especially in regard to smallpox and vaccination. It is a fact that Chinese land upon our shores with large scabs upon their arms, and yet they are not vaccinated, because, as the ship's surgeon says, that when they vaccinate them, the Chinese suck the wound, and then rub in some irritating substance that swells their arms, but does not protect them, producing, instead of a vesicle, an irritant sore that scabs over and fosters the deception of being successfully vaccinated. We might tell the Conference something of which they were now ignorant, but could learn nothing from them.

Dr. Rosenstirn, San Francisco Board of Health, thought that if Dr. Perry had spoken in favor of sending a delegate instead of against that proposition, he could not have spoken more favorably. The object of the Conference is for discussion of contagious diseases, and that we could give a deal of information upon this subject by attending is admitted by Dr. Perry in his remarks.

Dr. Simpson had only a word or two to say: Dr. Perry will admit that we have difficulties in regard to quarantine unknown to other States, and by letting them know our condition we would gain their support in all matters appertaining to the exclusion of disease. We ought, without doubt, be represented at that National Conference.

Dr. Orme agreed with Dr. Simpson, that we ought to have a representative there, and thought we ought to have two delegates at the Conference, as it was of vital importance to this State that our views be fully explained and the difficulties under which we labor in our isolated condition be fully set forth.

Dr. C. A. Ruggles thought there could be no doubt of the importance of this question, and was of the opinion that a delegate would by consulta-

tion gain more information than by any other means. The question for us to decide is, will the Governor consent to appropriate any diversion of this fund for this purpose? He was decidedly in favor of it, and thought that when explained to the Governor, there would be no difficulty in obtaining his consent, as it was to be used in the cause for which it was designed.

Dr. Barger, Health Officer of San Francisco, would like to ask, for information, the wording of the Act, which being recounted by the Secretary, Dr. Tyrrell, Dr. Barger said he could not see where the diversion spoken of by Dr. Ruggles came in, as he thought the Act contemplated we should use this money for the prevention of contagious disease, which is now what your Board designs to do.

The question being called for, a vote was taken, when the motion was carried unanimously.

Dr. Perry, of the San Francisco Board of Health, asked leave to introduce the following resolution:

Resolved, That a committee of two be appointed from the State Board of Health and from the San Francisco Board of Health to agree upon sanitary measures affecting both the State at large and the city of San Francisco, to be urged for passage before the next Legislature. This committee to report at a conference of both Boards.

Leave being granted, the resolutions were offered and carried unanimously.

The Secretary read a letter from the Health Officer of San Francisco, announcing the arrival of the steamer "Parthia," and her detention in quarantine, and informed our Board that her cabin passengers had escaped quarantine by leaving the steamer at Vancouver, British Columbia, and, being refused passage by sea via the Goodall, Perkins & Company's line of steamers, crossed the continent by the Northern Pacific Railroad.

The Secretary was instructed to take whatever steps he deemed necessary to protect California from this new inroad of infectious disease through the Oregon Railroad, and notify the officers of the company of the dangers which threatened their passenger traffic through this means. The communication was ordered on file.

A vote of thanks was passed to his Honor Mayor Pond and the San Francisco Board of Health, for their attendance and deliberations in the business of the Board.

Drs. Cole and Simpson were appointed the committee to consult with a like committee from the San Francisco Board of Health on legislative matters.

After quite an animated discussion upon the proper means of quarantining smallpox, indulged in by Dr. Ruggles, Dr. Simpson, Dr. Cole, and Dr. Bayer, on motion, the meeting adjourned.

GERRARD G. TYRRELL,
Secretary.

REPORT OF THE PERMANENT SECRETARY.

To the State Board of Health :

GENTLEMEN: In presenting this the tenth biennial report of the State Board of Health, your Secretary is glad to be able to congratulate the Board upon the advances it has made in the direction of inculcating the great principles of sanitary science in the public mind. So satisfied are we of the increase in the belief that the restriction or prevention of epidemic disease is not beyond the power of human intelligence, properly directed, that sanitary legislation in the coming session may be looked for with some degree of confidence in obtaining the passage of such laws as will make the sanitary government of this State equally as much a matter of vital necessity as the civil government itself.

Within the past two years nearly all the States in this Union have established State Boards of Health, and with these this Board is in close communion. Through the conference of these Boards we have adopted certain regulations whereby we each notify the other of the appearance of any epidemic, contagious, or infectious diseases, thus putting each State upon its guard to watch the progress of communicable affections, and take such precautionary measures that upon the very threshold of their march we can, by sanitary vigilance, stop them. Through the circulars and publications of your Board, an interest has been awakened in the public mind regarding the prevention of disease and the wonderful possibilities that lie in sanitary precaution and reform, which in no other way could be brought so directly under its notice. We find its fruits in the desire to establish local Boards of Health; in the abandonment of polluted water supplies; in the sewerage of towns hitherto without drainage; in the destruction of garbage by burial or by fire; in the building of school houses properly warmed and ventilated; in the teaching of hygiene in schools and colleges, and in the general belief now dawning upon the public mind that cleanliness is next to godliness, and that disease and death follow closely in the wake of debauchery and dirt.

An efficient co-worker with our Board has been the press, and to its most powerful aid may be ascribed the dissemination of sanitary truths within our borders, and by its great influence we have been enabled to procure some legislation of incalculable value to the welfare of California. Our correspondents have with almost unfailing regularity transmitted their monthly records, whereby we were enabled to give a tolerably fair estimate of the general healthfulness of the State during the past two years. The mortality statistics, we regret to say, are not by any means complete, neither can they possibly be under the present law relating to births, marriages, and deaths. The cities and towns reporting deaths as a general rule report only those deaths within their limits, a few including those in the immediate vicinity.

Many deaths occur within a short distance, and are seldom reported, and very many more occur throughout the State of which this office hears nothing. This is a condition of affairs that should not be permitted to exist in any State or community professing to be in the van of civilization. Correct vital statistics are as necessary to the well being of a State as they are to a

community. By them we can form some idea of sickness and mortality, with reference to the causes, and the comparative prevalence in localities, as well as the death rate. Again they afford a reliable record of certain events, which are often essential to be proved in establishing the right to property or its distribution, and not infrequently are they a reliable aid in the detection of crime. Within but a short time we have had the mortification of confessing to applicants for information relative to deceased persons the inability of our office to furnish the requisite legal knowledge required, no records being kept by the County Recorders, as required by law, no data being furnished them by physicians or others. This can only be rectified by making the recording of deaths compulsory, under a heavy fine or imprisonment: otherwise the law will be as now, completely ignored.

LEGISLATION.

An attempt was made before the Legislature of 1884 to have the law so changed that a correct registration might be possible. It was unfortunately never brought to a test vote. Accordingly, at the session of 1886, the following bill was introduced by Senator Briceland, and known as Senate Bill No. 113, with a view to amending the Political Code relative to the registry of births, marriages, and deaths:

AN ACT

To amend sections three thousand and seventy-seven, three thousand and seventy-eight, three thousand and eighty, and three thousand and eighty-two of an Act entitled "An Act to establish a Political Code," approved March twelfth, eighteen hundred and seventy-two, relative to the registry of births, deaths, and marriages.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section three thousand and seventy-seven of said Act to establish a Political Code is amended so as to read as follows:

Section 3077. All persons registering marriages, births, or deaths, must, at the close of every calendar month, file with the County Recorder a certified copy of their register. Each certificate must certify, as nearly as may be ascertained, the name in full, age, occupation, term of residence, in the city or county, birthplace, condition, whether single or married, widow or widower, sex, race, color, last place of residence, and also, when of accidents, the cause of death; and, also, when of births, the sex and color of the child, and name and nativity of its parents. Each person filing such copy is entitled to a compensation of twenty-five cents for each birth, marriage, or death so recorded, and the Recorder must give a certificate of such filing to the person entitled thereto, stating the number of deaths, marriages, or births recorded, and the amount due therefor. Upon the presentation of the Recorder's certificate to the County Auditor, he must deliver, at once, without any order of the Board of Supervisors, a warrant for the sum due, payable out of the General Fund of the County Treasury, and the County Treasurer is directed to pay the same. The Auditor must report the amount of warrants so drawn each month to the Board of Supervisors.

SEC. 2. Section three thousand and seventy-eight of said Act entitled an Act to establish a Political Code is amended so as to read as follows:

Section 3078. If, at any birth, there is no attending physician or midwife, the parents must make the report, and are entitled to the same compensation prescribed in the preceding section.

SEC. 3. Section three thousand and eighty of said Act to establish a Political Code is amended so as to read as follows:

Section 3080. The County Recorder, at the close of each month, must transmit to the Secretary of the State Board of Health, at Sacramento City, a certified abstract of the register of births, marriages, and deaths, prepared in the manner prescribed by the Secretary, and upon blanks furnished by him.

SEC. 4. Section three thousand and eighty-two of the Act to establish a Political Code is amended so as to read as follows:

Section 3082. Any person on whom a duty is imposed by this chapter, who fails, neglects, or refuses to perform the same, is liable to a penalty of fifty dollars and costs of suit for each offense, to be recovered in an action by the District Attorney of the proper county; one half of the penalty to be retained by him for his services, and the remainder to be paid into the General Fund of the county. The Secretary of the State Board of Health and the County Recorder must inform the District Attorney of any neglect of duty as prescribed in this chapter.

SEC. 5. This Act takes effect thirty days after its passage.

The bill was referred to the Committee on Hospitals, reported back with a recommendation for passage, and reached its second reading. Further than this it never got, although Dr. Brice land did his best to get this bill called up and passed. The passage of this bill would have required the registration of births, marriages, and deaths every month, and the compensation of those registering. It had also the good feature of throwing the onus of prosecution upon the State Board of Health in case of failure or neglect to register, and compelling the District Attorney to enter suit against the delinquent.

At the time this bill was introduced Senator Brice land also introduced Senate Bill No. 114, which read as follows:

AN ACT

To amend section three hundred and seventy-eight of an Act entitled an Act to establish a Penal Code, approved February fourteenth, eighteen hundred and seventy-two, relating to the preservation of the public health and safety and registration of births, deaths, and marriages.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section three hundred and seventy-eight of the Act entitled an Act to establish a Penal Code, approved February fourteenth, eighteen hundred and seventy-two, is amended so as to read as follows:

Section 378. Every person charged with the performance of any duty under the law relating to the public health, and every person charged with the duty of keeping a register of births, marriages, or deaths, and every Recorder, or other person, whose duty it is to report to the State Board of Health, who willfully neglects, or refuses to perform the same, and every person who willfully refuses to obey the rules and regulations passed by any Board of Health, or health officer having the powers of a Board of Health, is guilty of a misdemeanor.

This Act if it had passed would have brought the registration of births, marriages, and deaths under the operation of the Penal Code, and consequently increased our powers of compelling the observance of the law. It reached a second reading, but no further, as it was impossible to convince enough of the Senators that such a bill would have added to the welfare of the State or their own glory.

It was evident that no bill affecting the registration of births, marriages, and deaths could obtain passage among such a body of men, as they had no idea that such a subject was of any importance, or worthy of their serious consideration, or, as one intelligent Senator said, "Oh, confound it, when a man is dead, what is the use of bothering any more about him; who cares what becomes of him or whether he is registered or not?" This is a specimen of the mentality our Board had to contend with in its efforts to serve the State and improve its health laws.

It was now thought that a registry of deaths might be obtained if we could succeed in passing a law requiring the issuance of a permit before the burial or cremation of any human body could take place. Accordingly, Senate Bill No. 111 was prepared and introduced by Senator Brice land, as follows:

AN ACT

To amend section three thousand and eighty-four of an Act entitled "An Act to establish a Political Code," approved March twelfth, eighteen hundred and seventy-two, relative to the interment or cremation of human bodies.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section three thousand and eighty-four of the Act to establish a Political Code, approved March twelfth, eighteen hundred and seventy-two, is hereby amended so as to read as follows:

Section 3984. No person shall inter, cremate, or otherwise dispose of any human body, in any city, county, or city and county, without having first obtained a permit. In incorporated cities, or counties, or cities and counties, the permit must be obtained from the person authorized to grant the same by any law, ordinance, or resolution passed for that

purpose. But in the absence of such law, ordinance, or resolution, the permit must be obtained from either the Coroner, or Health Officer, Board of Health, or if the Coroner be absent, then from the Health Officer or Board of Health; and if there be no Board of Health or Health Officer, then from a Justice of the Peace. The person applying for a permit must produce and file with the officer issuing the permit a certificate signed by a physician, or a Coroner, or two reputable citizens, setting forth as near as possible the name, age, color, place of birth, occupation, date, locality, and cause of death of deceased. And no permit shall be granted without the production of such certificate. Such permit must be filed with the County Recorder, and the person so filing is entitled to the compensation provided for in section three thousand and seventy-seven of this Code, but if any other registration of the death of the decedent shall have been made, the Recorder must record the name but once.

Sec. 2. This Act takes effect thirty days after its passage.

This, like the other bills, was referred to the Committee on Hospitals, and recommended for passage.

It reached its second reading, but was opposed from going further upon the grounds that it was putting the citizen to unnecessary trouble, and that in outside districts it might not be within the power of the friends to get such a permit, and that no right could exist to abridge the liberty of the citizen in burying his dead when he pleased. According to this kind of reasoning the bill was not given a third reading, and was buried without further ceremony.

Under the present law, as you are aware, relating to the registration of deaths, births, and marriages, it is defined who are to keep registers, and for their neglect to do so are liable, upon action of the District Attorney, to a fine of \$50; but as no person ever heard of a prosecution by any District Attorney within the State, the law was disregarded and wholly inoperative. To take this matter into the Penal Code, where punishment might be meted out to offenders, Senator Briceland introduced Senate Bill No. 110, as follows:

AN ACT

To amend section three hundred and seventy-seven of an Act entitled an Act to establish a Penal Code, approved February fourteenth, eighteen hundred and seventy-two, relating to the disposal of human dead bodies, and preservation of the public health.

SECTION 1. Section three hundred and seventy-seven of an Act entitled "An Act to establish a Penal Code," approved February fourteenth, eighteen hundred and seventy-two, is amended so as to read as follows:

Section 377. Every person who is charged with a duty relating to the registration of deaths under Chapter III, Title VII, of the Act to establish a Political Code, approved March twelfth, eighteen hundred and seventy-two, who—

1. Willfully fails to keep a registry of the name, age, residence, and time of death, of a decedent; or,

2. Willfully fails to register with the County Recorder a certified copy of such register, as is provided for in said chapter; or,

3. Willfully inter, cremates, or otherwise disposes of any human body, in any city, county, or city and country, without having first obtained a permit, as provided for in said chapter; or,

4. Willfully grants a permit for the interment, cremation, or disposition of a dead human body, without the certificate provided for in said chapter; or,

5. Willfully violates any of the laws of this State relating to the preservation of the public health;

Is guilty of a misdemeanor, and is, unless a different punishment for such violation is prescribed by this Code, punishable by imprisonment in the county jail not exceeding one year, or by fine not exceeding one thousand dollars, or by both such fine and imprisonment.

This bill was referred to the Committee on Hospitals and recommended for passage; it reached a first reading, was placed on the file, and there it remained beyond resurrection. We now endeavored to improve the laws relating to

LOCAL BOARDS OF HEALTH.

The State Board of Health, among other duties, is required to place itself in communication with local Boards of Health. In order to do that Sec-

tion 3061 of the Political Code says: "It shall be the duty of the Board of Trustees, Council, or other corresponding Board of every incorporated town and city of this State, to establish by ordinance a Board of Health for such town or city to consist of five persons," etc. This law, we regret to say, has not been obeyed in the manner contemplated by its originator, only twenty-six incorporated towns having local Boards of Health out of the sixty-three that should have them. As the establishment of local Boards of Health in every town is of the utmost importance as a district sanitary authority to which the people could look for protection from, and the preventive management of, dangerous contagious diseases, we endeavored to make the law mandatory, so that in each unincorporated town of five hundred or more inhabitants there must be appointed at least a Health Officer, who should have all the power of a Board of Health, and that in incorporated cities where the City Trustees, or other officers, failed to organize a Board of Health, the power should be delegated to the State Board to have such Board organized according to law. The object of the new law was to get the whole State under complete sanitary organization, so that our Board would have a network of communication through which we could keep thoroughly apprised of the condition of the public health and be enabled to take such means to prevent the spread of epidemics, that contagious diseases could make no headway. With this in view the following bill, No. 112, was introduced in the Senate:

AN ACT

To amend section three thousand and sixty-two of, and to add a new section to, an Act entitled "An Act to establish a Political Code," approved March twelfth, eighteen hundred and seventy-two, relating to Boards of Health.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section three thousand and sixty-two of said Act to establish a Political Code is amended so as to read as follows:

3062. The Board of Supervisors of each county must appoint, in each unincorporated city or town of five hundred or more inhabitants, a Health Officer, who has all the duties and powers of the Board of Health and Health Officer, as specified in this and the two preceding articles.

SEC. 2. There is added to said Code a new section, to be called section three thousand and sixty-four, which shall read as follows:

Section 3064. The Board of Supervisors must fix the salary or compensation of Boards of Health or Health Officer, and provide for the expenses of enforcing the provisions of this article. If the Board of Supervisors or Board of Trustees, Council, or other corresponding Board of any incorporated town neglects to provide a Board of Health or Health Officer by the first day of July, eighteen hundred and eighty-seven, the State Board of Health may direct the District Attorney of the county to begin an action against such Board of Supervisors, or Board of Trustees, or corresponding Board, to compel the performance of their duty, or may appoint a Board of Health or Health Officer, with the powers of a Board of Health, for such town or city, and the expenses of such Board of Health or Health Officer shall be a charge against the incorporated city or town for which such appointment shall be made, and when the appointment is made for unincorporated towns the expenses of the Board of Health or Health Officer is a charge against the county.

This bill was referred to the Committee on Hospitals and reported favorably, was placed on file and reached its second reading, thence it fell into "innocuous desuetude," and never was heard of more during the session. From our utter failure to amend the law relating to Boards of Health, our State is in a very precarious position should any severe epidemic disease become general, as we are without proper organization or the necessary discipline to enter into a combat with such a foe. At the coming session of the Legislature our co-member and Senator proposes to make another attempt to get this or a similar bill before the Senate, so that order may be restored from chaos.

VACCINATION.

In times of immunity from epidemics of smallpox the practice of vaccination is neglected, hence in a few years there is accumulated in the State a vast array of unvaccinated persons who fall ready victims to the malady when it reappears from any cause. To endeavor to make the practice general and protect us from the ravages of smallpox, we had the following Act introduced into the Senate by our fellow member, Dr. Briceland:

AN ACT

To encourage and provide for a general vaccination in the State of California.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Trustees of the several common school districts in this State, and Boards of common school government in the several cities and towns, are directed to exclude from the benefits of the common schools therein any child or any person who has not been vaccinated, until such time when said child or person shall be successfully vaccinated.

SEC. 2. The Trustees, or local Boards, annually, or at such special times to be stated by the State Board of Health, must give at least ten days' notice, by posting a notice in two or more public or conspicuous places within their jurisdiction, that provision has been made for the vaccination of any child of suitable age who may desire to attend the common schools, and whose parents or guardians are pecuniarily or otherwise unable to procure vaccination for such child.

SEC. 3. The said Trustees or Board must immediately after the passage of this Act, and every year thereafter, appoint some competent physician and fix the compensation for his services, the duty of which physician shall be to ascertain the number of children or persons in the school district, or subdivision of city school government, being of age suitable to attend the common school, who have not been already vaccinated, and also to furnish to the said Trustees or said Board a list of the names of all such children or persons. It shall also be the duty of said physician to provide himself with good and reliable vaccine virus wherewith to vaccinate such of the number of children or persons aforesaid as have not been vaccinated according as the Trustees or Board shall direct, and to thereupon give certificates of vaccination when said physician has, by personal examination, assured himself of the success of the vaccination, which certificates shall be evidence thereof for the purpose of a compliance with section first hereof.

SEC. 4. The necessary expenses incurred by the provisions of this Act shall be paid out of the common school moneys apportioned to the district, city, or town, and if there be not sufficient money, the Trustees must notify the Board of Supervisors of the amount of money necessary, and the Board must, at the time of levying the county tax, levy a tax upon the taxable property in the district sufficient to raise the amount needed. The rate of taxation is ascertained by deducting fifteen per cent for delinquencies from the assessment, and the rate must be based upon the remainder. The tax so levied shall be computed and entered upon the assessment roll by the County Auditor, and collected at the same time and in the same manner as State and county taxes, and when collected shall be paid into the County Treasury for the use of the district.

SEC. 5. The Trustees of the several school districts of this State are hereby required to include in their annual report, and report to the Secretary of the State Board of Health, the number in their several districts between the ages of five and twenty-one years who are vaccinated, and the number unvaccinated.

SEC. 6. This Act shall take effect immediately.

We had hoped by the passage of this bill to insure the vaccination of the rising generation, and by making it general in its application, that no opposition would arise to defeat it. It was referred to the Committee on Hospitals, and reported back favorably, with a recommendation for passage. It was read a first and second time, and placed on file. When it was called a third time for passage, one of the learned Senators from San Francisco, of whom we were taught to expect better things, moved that "the enacting clause be stricken out," as he afterwards said, "he was not going to have any man's child kept out of school because it was not vaccinated." As this man was a political wirepuller, with great influence in his delegation, the enacting clause was stricken out, and the bill was then and there effectually strangled. This has been the history of our attempts at improving the health laws of California, of our desire to have enacted such measures as would add to the safety and welfare of the people. Upon every occasion

we were ignominiously defeated, through the ignorance or design of those who were elected by the people to serve their interests. Happily, at this time, smallpox was imported into the State from Mexico. It soon began to inspire fear of its extension among the constituents of our Senators and Assemblymen, and, like the sinners of old, they cried, "What shall we do to be saved?" Smallpox was epidemic in Mexico: it had crossed our border and was now traveling north. Your Board had no funds with which to take any preventive measures, and your Governor had no means at his command. In this emergency, although irritated by former incomprehensible defeats, Senator Briceland introduced into the Senate the following bill (No. 431):

AN ACT

To appropriate money to prevent the introduction of contagious and infectious diseases.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The sum of twenty thousand dollars is hereby appropriated out of the General Fund in the State Treasury, to be expended by the State Board of Health, under the direction of the Governor, for the prevention of the introduction of contagious and infectious diseases into the State. The claims for such expenditures must be audited by the Board of Examiners; except that when a contingency arises, which, in the opinion of the Governor, demands the immediate use of money, the Controller may draw his warrant upon the order of the Governor in such sums, not exceeding one thousand dollars, as he may direct in the name of the State Board of Health; *provided*, that an account must thereafter be filed with the Board of Examiners and audited by it and transmitted to the Controller showing the manner of such expenditure.

SEC. 2. This Act takes effect immediately.

This bill seemed to meet with approval, but could not be permitted to be passed without some amendment or other; accordingly, Senator Clunie amended it by inserting \$10,000 instead of \$20,000, to be appropriated for sanitary purposes, and in this shape the bill passed and was signed by the Governor.

The session was now about closed, and no further attempt could be made to increase the usefulness of the State Board of Health. To be sure, we did make an attempt to get \$5,000 for two years for the State Analyst, to enable him to employ an assistant or two, so that we could have the mineral waters of the State analyzed, but the Committee on Appropriations would not consent to place it in the bill, and as a consequence the mineral waters remain unanalyzed, except in those cases undertaken by private enterprise.

The history of legislation for the session of 1886 may be set down as a failure. No law was passed to amend our health laws, and the only substantial gain made was the appropriation of a small sum for emergencies, should such arise. We must reluctantly confess that this speaks very badly for the intelligence of those chosen by the people to make their laws. Where legislation is to be had to preserve hogs from cholera, horses from glanders, cattle from plague, or trees from insects, there is no trouble in getting a respectful hearing of the bill and its speedy passage. But when the State Board of Health, true to its mission of mercy, seeks to amend the laws appertaining to health, so as to prevent the ravages of disease, to prolong by wise sanitary measures the period of existence allotted to man, to preserve human life by the lessening of the opportunities for crime, to prevent the advent of disease by timely measures of precaution and sanitary watchfulness, we are met with the most supreme indifference, or perhaps asked, "How much is there in the bill?" No consideration of the important results involved, no thought of the interest of the State of California in the preservation of its people, or in the establishing of its claim as the world's sanitarium: on the contrary every effort made to improve our sanitary

laws has been looked upon as some attempt upon the part of the "doctors" to obtain some special legislation for their own benefit or aggrandizement, which can be illustrated by the remark of a legislator to the writer, when he said: "Doctor, where is the nigger in that fence? I want a look at him."

Since that time two years have elapsed, during which period your Board, through its Secretary, has published monthly, without a single exception, a circular giving a report of all the deaths received from his private correspondents, the causes, as far as known, and the ages of the decedents; besides this, a list of all the prevailing diseases of each county has been summarized, and deductions drawn therefrom concerning the sanitary condition of the State; in addition, your Secretary thought it prudent each month to introduce some few hints as to sanitation and its necessity. By this means the public has been kept informed of the course of disease, where prevalent, and how to avoid it; it has also been taught that the State has provided a guardian over its vital interests in the form of your Board; it has also learned, we hope, that the welfare of the people, their preservation from disease and death, is its whole object and desire; it has also learned that the power of the State Board of Health is restricted—it has no mandatory power—and in its present helpless condition can only advise.

What we ask from the Legislature is more power to act in the interest of California: when our Board is asked to check an epidemic, we want the power to do it; when a town or city refuses to restrain its people from communicating its infectious disease to its innocent neighbors, we want to be able to compel such town or city to keep its disease at home, and there destroy it; if a county will not establish a Board of Health or a Health Officer, we must have compulsory power to establish such Board, as by such Boards unification of purpose is established, and a cordon of faithful guardsmen of the public weal organized, so that disease cannot spread and human life be thus imperiled.

We sincerely trust that the efforts made by the Board may be so productive of good that our Legislature will see that what we ask has "no nigger in the fence," but is solely and wholly in the interest of the people of California. We have within this State the possibilities of a perfect sanitarium, an embodiment of all that constitutes the perfection of a hygienic home. If we destroy it by neglect, or impair its perfections by sanitary delay, we are alone to blame. Nature has given us climate, soil, and water in perfection; it is our duty to preserve their purity.

QUARANTINE.

The subject of coast quarantine had engaged the attention of your Board for many years, and as you are aware our efforts failed of success. In the early part of 1886, your Board determined to make another effort, as we were continually threatened by an invasion of smallpox, cholera, and yellow fever, by way of China, Mexico, the Sandwich Islands, and Japan. Accordingly the following bill was prepared and forwarded to our Representatives in Washington:

AN ACT

To establish a Quarantine Station at the Port of San Francisco.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled:

THAT, WHEREAS, The Port of San Francisco is peculiarly liable to the incursions of infectious and contagious diseases from South America, Pacific Islands, and Asiatic ports, and it is desirable to establish a well appointed quarantine station thereat;

Now, THEREFORE, There is hereby appropriated out of any money in the Treasury not otherwise appropriated, such sum, not exceeding one hundred thousand dollars, as may be necessary to purchase grounds and erect buildings suitable for quarantine purposes at the port of San Francisco. The same shall be forthwith expended, for the purpose aforesaid, under the direction of the Secretary of the Treasury.

The said quarantine grounds and buildings, when completed, shall be under the supervision of the Marine Hospital service at said port. The use thereof, from time to time, may be granted by the authorities of said Hospital to the Health Departments of the City and County of San Francisco or State of California, upon condition that the said Health Departments, or either of them, assume the expense of maintaining the same.

This bill met with the approval of Senator Leland Stanford, who introduced it and watched its progress through the committee and had it favorably reported. In the meantime your Board had printed sufficient copies of the bill to supply the members of both houses, which were immediately forwarded, one copy to each member, accompanied by the following letter:

CALIFORNIA STATE BOARD OF HEALTH, }
SACRAMENTO, January 23, 1888. }

Hon. ———, Washington, D. C.:

DEAR SIR: At a meeting of the State Board of Health of California, held January fifth, it was unanimously resolved to ask all of our Senators and Representatives in Congress to urge to immediate passage the "Act to establish a quarantine station at San Francisco."

Said bill has already been introduced in the Senate by Senator Stanford, and we now inclose you a copy of the same, and hope, as you are familiar with our necessities at this time, when smallpox has already been introduced into our State from China, and that we will probably be obliged to quarantine against cholera before many months, that you will give this matter the immediate attention which its importance demands.

This bill has the indorsement of the Board of Trade and Commerce in San Francisco, and has been urged and demanded by our State Board of Health since 1880.

I remain, dear sir, yours, respectfully,

GERRARD GEO. TYRRELL,
Secretary.

To this appeal many very favorable responses were returned, and the Senate passed the bill. When it reached the House, Congressmen W. W. Morrow and C. N. Felton took charge, and by persistent and patient efforts, with the aid of their colleagues, had the bill passed, amended so as to include San Diego. This bill was signed by the President, and now we have the satisfaction of knowing that very soon we will have a quarantine station and quarantine buildings, both in the port of San Diego, as well as in the port of San Francisco. For this boon the State Board of Health may claim no small share, as it has worked persistently, in the face of almost insurmountable obstacles, until the object sought was obtained.

Another source of gratification to this Board is a letter received from Dr. Joseph Holt, the distinguished sanitarian of New Orleans, in which he states that General J. B. Hamilton has assured him that his plan known as the "Holt Plan," or "New Orleans Plan," will substantially be adopted in all the new quarantine stations to be hereafter established. As this plan has been adopted in the Dominion of Canada, from its proven success in New Orleans, your Secretary deemed it of sufficient interest to obtain the permission of Dr. Holt to republish his descriptive history of the practical operations involved in the carrying out of his ideas. Dr. Holt not only gave his cheerful consent, but supplied our Board with the original plates to illustrate the paper, and which your Board will find duly reprinted in this report. The organization of quarantine buildings, supplied with Dr. Holt's apparatus, will practically relieve us of the constant dread of infectious disease reaching our shores by sea. We still have to contend with the positive danger that constantly threatens us inland.

In the early part of the year 1887 smallpox was very prevalent throughout Mexico, and especially along the border towns in communication with

our State. As no precautionary or sanitary measures are observed among the Mexicans in the frontier settlements, the advent of any of them into our State is liable to introduce the germs of the disease, and this is just what did happen in February, 1887, when some Mexicans from over the border attended an entertainment in Los Angeles. In a few days afterwards smallpox developed in that city, a detailed account of which will be found in a paper by your President in another part of the report. Inland quarantine against smallpox was at once instituted by your Board, and Inspectors placed on all trains entering the State and on all vessels arriving by sea from Mexico. We were enabled to do this from the fact that a fund had been provided for such purpose, without which your Board would have been perfectly powerless. Through the vigilance used by our Inspectors not a single case of smallpox was permitted to gain entrance by land, and by the timely efforts of your Board, the disease was quickly subdued by the local authorities in the city where it started.

If our Legislature in its wisdom will continue in force the Contingent Contagious Disease Fund, and increase its amount to at least the original sum asked, we will be enabled to watch our borders more closely, which even now is absolutely necessary, as the increase of travel into this State is acquiring such proportions that our danger of infection from abroad is much increased, and daily increasing. If it should become necessary to establish temporary buildings on the border to disinfect and fumigate goods and passengers arriving from smallpox, cholera, or yellow fever stricken districts, it is beyond question necessary that a sufficient fund be set aside to be used for that purpose. The pittance now in the hands of the Governor, or rather at his disposal, would not begin to place an effective quarantine against yellow fever, which at the present time is epidemic in Florida. To efficiently guard our State against this most dreaded of all diseases, the quarantine must be rigid. We must be prepared to stop all passengers and goods coming from affected districts. We must have means to temporarily lodge the passengers for a period of ten days, and also the means of fumigating and disinfecting both their persons and their goods. To do this we must have temporary structures erected some distance away from the line of travel, with all the appliances necessary to make travelers comfortable during their time of detention. We must have also a temporary hospital for the retention of any that are sick. All this involves a considerable outlay, and will no doubt meet with much opposition from those who do not realize what an epidemic of cholera or yellow fever would cost this State. Better far that any amount of money be expended to preserve us from such a calamity, that would not only kill our inhabitants, but also effectually kill our State as a sanitarium, and take from us our boast that California is the most desirable place of residence in the known world.

There is no necessity to further enlarge upon this need. We must have a contingent fund, under the control of the Governor, for immediate use whenever needed, and it is to be hoped that the incoming Legislature will have sufficient sagacity to recognize the importance of this measure, and have wisdom and forethought enough to make the appropriation so large that preventive measures can at any time be taken, so as to insure our State against the invasion of disease, if it is within the power of intelligent humanity to do it.

Since the publication of our last biennial report, your Secretary has the pleasure of recording that our State has been particularly free from epidemic disease, with the exception of an inroad of smallpox, which never attained to any serious dimensions.

SMALLPOX

First appeared in Los Angeles February 16, 1887. On the nineteenth, ten cases had developed, which were all removed to the smallpox hospital, or carefully isolated at their homes. It was ascertained that all these cases occurring in young men had a common exposure in a variety theater much frequented by Mexicans, and as smallpox was prevalent in Mexico at the time, the presumption was strong that the infection was carried by the clothing of the Mexicans into the closely packed theater, there to produce these results. On the twenty-seventh of February the disease had spread to Lugo settlement, nine miles from Los Angeles, and from day to day reports were received of cases of smallpox here and there throughout the county. A degree of alarm having thus been incited, the State Board of Health deemed it its duty to take some active steps to prevent, if possible, the extension of the disease beyond its present boundaries. Accordingly a special meeting of the Board was held on March 8, 1887, for the purpose of taking into consideration the propriety of quarantining the southern border of the State. We had information that the disease was very prevalent in Sonora, Guaymas, and Mazatlan, in Mexico, all towns in close relation with our State. It was by this time quite prevalent in Los Angeles, and some cases were reported in San Diego County. After due consideration, the Board instructed your Secretary to confer with the railroad authorities, and make such arrangements that a quarantine might be developed at any time the Board deemed necessary. As you are aware, our mission was successful, and resulted in our placing Medical Inspectors at all the points where smallpox would be likely to invade the northern portion of the State. By this means smallpox was confined to the lower counties, and by the first of May we were able to discontinue their services, and by June, 1887, the disease was wholly under control.

In February, 1887, a single case of smallpox appeared in San Francisco. Its origin was not traced. The city remained free from the disease until May third, when a Chinese passenger on the steamer "City of Sydney," from Hongkong, introduced it eight days after deportation from the steamer. In the report kindly furnished by Dr. S. S. Herrick, of San Francisco, a detailed statement is made of the progress of the disease in that city, whereby it will be seen that at no time did it actually develop into a serious epidemic. In the early part of the year your Secretary was instructed to issue a circular calling attention to the necessity of vaccination, together with the means to be used to prevent the spread of the disease. Accordingly twenty thousand copies of the following circular were printed and distributed throughout the State:

FACTS FOR THE PEOPLE CONCERNING SMALLPOX AND VACCINATION.

Smallpox.

After an absence of many years, smallpox has again been imported into our State. The extreme liability of its diffusion through railway intercommunication, and personal contagion, and in view of checking its progress, the State Board of Health feels it its imperative duty to present certain suggestions and precautions, the compliance with which will restore confidence to those who suffer from fear of the disease, and absolute immunity to those in danger of contagion. There are two ways to obtain protection from smallpox. One is by strict quarantine, to completely shut it out, and the other is to anticipate it by a general vaccination. As the first mode is more or less liable to failure, through lack of vigilance on the part of the authorities, or absence of indications of the incubating disease that would warrant detention, it is the more certain plan to vaccinate as well as quarantine, and then we have the disease wholly under command as nearly as human means can do it.

Preventive Measures.

Vaccination is the only preventive measure that is known to successfully avert smallpox. If properly done with reliable virus, whether bovine or humanized, there is nothing more absolutely certain than the fact of the protection of the individual from the fatal effects of smallpox.

The vaccination ought, if possible, to be performed by an educated physician, with lymph that *he knows* to be pure and reliable, and who is perfectly familiar with the typical vesicle produced; or, in other words, who knows that the vaccination has been successful, or *taken* properly.

There are, however, certain precautions to be taken in the performance of the operation of vaccination, to make the result certain. The State Board of Health cannot too earnestly protest against the careless and unscientific manner in which it is too often performed and the result ascertained. In many, very many, such cases vaccination serves only to deceive, through a false sense of security; much unmerited disparagement is cast upon the value of the operation, and the confidence which its preventive power inspired is rudely shaken when the *supposed* to be vaccinated person is stricken with smallpox. This result is to be doubly deplored; first, on the part of the stricken victim, and again for the fruitful theme for controversy which it suggests to the opponents of vaccination, and which it is often very difficult to combat. To avoid, as much as possible, any such contingency, and to insure the result of a perfect vaccination, the following recommendations are presented for adoption to all vaccinators, as designed to secure and maintain the public confidence in the protective power of vaccination, which is beyond serious question:

First—Except as far as the immediate danger of smallpox may require, vaccinate only subjects that are in good health.

In case of infants, ascertain that there is not any febrile state, any irritation of the bowels, or unhealthy condition of the skin.

Do not vaccinate, except in cases of great necessity, where there has been recent exposure to the infection of measles, scarlet fever, or diphtheria, or where erysipelas has been prevailing in or about the place of residence.

Second—In all ordinary cases of primary vaccination make such insertions of vaccine virus as will produce at least two or more separate good sized vesicles, which should be carefully protected from injury during their progress toward maturation, avoiding afterward the premature removal of the crust. Do not use any needless dressing to a vaccinated arm; a simple strip of clean, soft muslin, carefully sewed round the arm, will protect it from abrasion.

Third—The virus used should be of known purity, whether in the form of humanized or bovine lymph. The crust or scab should never be used except in cases of necessity, and then only under the surveillance of the physician. Self-vaccination, or vaccination performed by unprofessional friends, unqualified to distinguish the true scab from that which is spurious, is often attended by serious results, and might be the means of introducing poisonous matter into the blood, which ought to be avoided, as death may be the consequence.

Fourth—Virus should *never* be used from the arms of revaccinated persons. There is no evidence that it possesses any protective power; but, on the contrary, may be injurious.

Human lymph should be taken only from subjects who are in good health, and of healthy parentage, preferring children whose families are known to you. Take the lymph from well marked, uninjured vesicles, when the vesicles are fully formed and plump. That is on the eighth day after primary vaccination, and before any conspicuous appearance of the red or inflammatory areola, which on the ninth day surrounds the vesicle. In opening the vesicles, which is done with a clean needle, be careful not to draw blood, and use no lymph or virus that is not perfectly clear and transparent when it exudes from the arm. If any blood should be drawn, wipe it carefully away before using the lymph, as on no account must blood be introduced with pure vaccine virus into the system of your patient. A most important point, upon which we strenuously insist, is that the vaccinating instrument, no matter what it is, is perfectly and undoubtedly clean; to be sure, wash it in fresh and pure water before using, and see that it is rewashed before using it on a second person. More serious and unfortunate accidents have occurred from carelessness in using unclean instruments than from any other cause known to this Board. If bovine virus is used, recollect that to insure its action the surface receiving it has to be well abraded and the lymph thoroughly rubbed in until the part is dry; neglect of this rule will result in many failures and bovine virus be unduly discredited.

Never use the scab for vaccinating purposes, except under the most exceptional circumstances; to its use may be attributed those cases of sore arms, poisoned blood, and unhealthy ulcers, which anti-vaccinators take such delight in quoting as their strongest argument against the precious gift of the immortal Jenner.

If the necessity arises that the scab must be used, see that it looks clean, is well umbilicated, and the edges semi-transparent. Do not use the center, but only the outer border of the crust. The portion to be used ought to be thoroughly softened in a drop or two of water, and then used in the same manner as lymph. It would be prudent to ascertain the condition of the child from whom the scab was taken before using it, and if not in perfect health, reject it. Caution cannot be too strictly observed when vaccinating from this source.

In smallpox there is always a period of latency, called the period of incubation, during which certain processes are going on preparatory to the development of the disease. This

period may be stated to be about ten to twelve days for the beginning of the fever, and fourteen days for that of the eruption. In the vaccine disease the virus begins to take on the fourth day, and with bovine virus on the fifth or sixth day, and such is the protective power of the vaccine virus that if it be inserted even after exposure to smallpox its shorter incubative stage enables it to anticipate the other, and if it do not altogether prevent it, it induces such a deviation from its regular course as to essentially modify it and deprive it of its greatest danger. Hence the importance of immediate vaccination after exposure to smallpox.

Every infant should be vaccinated within three or four months after its birth.

Every child should be revaccinated before its tenth year.

No child should be permitted to enter any school until it is successfully vaccinated, and so certified to by the operating physician.

Every adult should be revaccinated every seven years. It may not take, but it secures the safety of those who try it.

In the Presence of the Disease.

No time should be lost, but a general vaccination insisted upon. Fortunately it is our great privilege to live in California, the inhabitants of which are too intelligent and well informed not to see the importance of this measure when smallpox invades their town or city. Smallpox in a community means the paralyzing of all trade and commerce. It means pecuniary loss, sickness, suffering, destitution, deformity, or death. It means a condition of things that in a civilized community could and should be at once arrested. All employers must take the initiative, and have every man in their employ vaccinated as the condition upon which their employment is continued. All railroad men, police officers, and those connected with public offices, should especially be protected, as they are constantly exposed through the traveling public to the germs of the disease, which may be lurking in the wayfarers' clothes, or among their baggage. In short, it is the imperative duty of the local authorities to secure protection to all classes, that none remain unprotected, to the imminent danger of their fellow citizens.

Smallpox in the House.

When, unfortunately, this occurrence has taken place, at once notify the Health Officer or the health authorities, then have every member of the family vaccinated at once. Smallpox, as said before, takes ten to fourteen days after exposure before it becomes apparent. Vaccine takes only four to six days. If, therefore, you are immediately vaccinated after exposure you will anticipate the disease, and either avert it or so modify it as to render it comparatively harmless and mild.

The patient should be placed, if practicable, in the highest room in the house, and as distant from the apartments of the rest of the family as possible. Here he should have the most complete isolation and ventilation that can be attained. The room, before occupancy, should be stripped of all unnecessary furniture, carpets, curtains, woolen goods, and clothing, and the utmost cleanliness observed, both with regard to the patient and the room. Disinfectants may be constantly used; especially should a vessel containing chloride of lime be placed at the bedside for patients to spit into. The same should be used freely in the vessels required for the reception of excreta, which should be at once removed and buried. Lastly, a large tub containing a disinfectant solution should be kept in the room, into which all soiled clothes could at once be plunged and removed for further disinfection. Rags should be used to wipe away all secretions from the mouth or nose, and immediately burned. All glasses, cups, or other vessels used by the patient, must be scrupulously cleansed and washed in a disinfectant solution. No person should be admitted into the room but those waiting upon the patient; and a sheet wrung out of a strong disinfectant solution ought to be suspended outside the door of the patient's room.

Smallpox is in its most contagious condition when the scabs are matured, and no convalescent patient should be permitted to mingle with his family until all the scabs have fallen off and the skin quite clean.

In case of death, wrap the body in a sheet saturated with a strong solution of sulphate of zinc, and have it coffined and buried without any unnecessary delay, without any wake or public funeral.

Disinfectant Solutions.

As these solutions are within the means of every one, the State Board of Health thinks it well to familiarize the public with their composition:

Roll Sulphur (brimstone), for fumigation. This is a cheap and efficient substance for fumigating rooms; it is positively destructive to disease germs, when efficiently used.

Sulphate of Iron (copperas), dissolved in the proportion of one and a half pounds to the gallon of water, is a cheap and reliable deodorizer and antiseptic for privies, cesspools, sewers, etc.

Sulphate of Zinc, in the proportion of four ounces of sulphate and two ounces of common salt to the gallon of water, is efficient and harmless for clothing, bed linen, blankets, etc. It should be used boiling hot, and the articles to be disinfected plunged into it and thoroughly boiled.

Corrosive Sublimate, in the proportion of a quarter of an ounce to the gallon, is an unsurpassed germicide and disinfectant, but has the disadvantage of being excessively poisonous, and therefore dangerous for general use.

Carbolic Acid is of uncertain strength, is expensive, and experience has shown that it must be employed in comparatively large quantities to be of any use. It is also liable, by its strong odor, to give a false sense of security.

How to Use Disinfectants.

I. *In the Sick Room.* The most available agents are fresh air and cleanliness. The clothing, towels, bed linen, etc., should, on removal from the patient, be placed in a tub of the zinc solution, boiling hot if possible. All discharges from the patient should either be received in vessels containing the copperas or corrosive sublimate solution, or if this is impracticable, should be covered with the solution. Unnecessary furniture, especially that which is stuffed, carpets, and hangings should be removed from the room at the outset if possible; otherwise they should remain for fumigation and treatment.

II. *Fumigation with sulphur* is the only practical method of disinfecting the house. For this purpose the rooms to be disinfected *must be vacated*. Heavy clothing, blankets, bedding, and other articles which cannot be treated with the zinc solution, should be opened and exposed during fumigation, as directed below: Close the rooms as tightly as possible, stopping up every crevice and keyhole; place the sulphur in iron pans supported upon bricks placed in washtubs containing a little water; set it on fire with alcohol or kerosene sprinkled upon it, and allow the room to remain closed twenty-four hours. For a room ten feet square at least two pounds of sulphur will be required; for larger rooms proportionately larger quantities will be necessary.

III. *Premises*, cellars, yards, stables, gutters, privies, cesspools, water-closets, sewers, drains, should be liberally treated with the copperas solution; it is cheap and effective. The copperas solution may be easily prepared by hanging a basket containing about sixty pounds of copperas in a barrel of water.

IV. *Body and Bedclothing.* It is best to burn all articles which have been in contact with persons sick with infectious or contagious diseases. Articles too valuable to be destroyed should be treated as follows: *Cotton, linen, flannel, blankets*, etc., should be treated with the boiling hot zinc solution; introduce piece by piece; secure thorough wetting, and boil for half an hour. *Furs, silks, heavy woolen clothing, bedcovers, and beds*, which cannot be thus treated with the zinc solution, should be hung in the room during fumigation, their surfaces fully exposed, and their pockets turned inside out; afterwards they should be hung in the open air—beaten and shaken. Pillows, beds, stuffed mattresses, upholstered furniture, etc., should be cut open, the contents spread out and thoroughly fumigated. Carpets are best fumigated on the floor, but should afterwards be removed to the open air and thoroughly shaken and beaten.

Finally.

If, from neglect or delay in enforcing precautionary measures, the disease shows a tendency to become epidemic, the public and private schools must be closed, church services suspended, and public assemblages of people, as at theaters, shows, circuses, skating rinks, or other gatherings, be prohibited. Other towns or cities would be fully justified in maintaining a non-intercourse quarantine against any place neglecting to enforce the sanitary measures which all past experience has heretofore demonstrated to be effective in "stamping out" this most loathsome and contagious of all contagious disorders.

GERRARD G. TYRRELL,
Permanent Secretary State Board of Health.

By order of the Board.

H. S. ORME, M.D., President.

Copies of this circular can be had for free distribution upon application to the Secretary, Sacramento.

The effect of this circular was at once apparent. Vaccination became quite general, and the supply of bovine for a time scarce, the demand being so great.

In the "Monthly Circular" for February, the State was warned of the advent of smallpox, and the necessity of general vaccination insisted upon; but as this bulletin reaches comparatively few, except when republished by the press, the advice was not heeded to the same extent as that given in the "Smallpox Circular."

In June, 1887, three cases of smallpox were discovered in Irvington, a village in Alameda County. Isolation and quarantine were at once established, and no other cases developed there.

In August a case of varioloid appeared in Berkeley, which was at once conveyed to the Oakland Smallpox Hospital. No other cases were reported.

In September, one case appeared in Oakland, and one in Cloverdale. In October, a case was reported in Oakland. In November, two cases were reported near Suisun, one case in Elmira, and one in Oakland. The disease was making some progress through the State, but very slowly. In December,

it was reported in Alameda, Solano, Marin, Sonoma, San Joaquin, Butte, Contra Costa, Nevada, Siskiyou, Lake, and Sierra Counties. The cases were small in number, but all as far as known traced their origin to San Francisco. In Sierra City the disease at one time assumed almost epidemic proportions. In response to a letter from us asking particulars of the outbreak in Sierra City, Dr. Tully replied that during the latter part of November, 1887, a saloon keeper named Joe —, was taken sick and attended by a physician, who told him that "he had smallpox, but as it was a mild case there was no need of making any fuss about it." Consequently none was made, and visitors were freely admitted to his room and allowed to sit in the barroom before he was fully convalescent, and to mingle freely with the public. The second case was a waitress in the same hotel in which the saloon keeper worked, and had visited his room daily. She was confined to bed after a few days' premonitory illness, but no announcement of smallpox was yet made. The third case was a miner who lived in the hotel and was one of the visitors to the first patient. The fourth case was also a miner and boarder at the hotel. These cases, the first seen by Dr. Tully, were formally declared to be smallpox, and steps were taken to quarantine the patients. Dr. Jump, of Downieville, saw these patients and confirmed Dr. Tully's diagnosis. Thirty cases occurred in the town, twenty-eight of which were directly traceable to the *mild* case in the hotel. Five deaths resulted from the mistake in not taking the necessary precautions with the first case and having it perfectly quarantined, isolated, and disinfected. The disease spread to North Bloomfield, where two cases occurred with one death. It appeared also in Sierra Valley, Loyalton, and Satley. In January, 1888, a rigid quarantine was instituted, and the disease ceased to spread.

We find in the "Monthly Circular" that during the month of January cases were reported in different parts of the State: two hundred and twenty-four in San Francisco, ten in Los Angeles, eight in Stockton, eleven in San José, three in Dunsmuir, two in Red Bluff, two in Redding, two in Sacramento, two in Berkeley, eight in Martinez, three in Tulare, one in Delta, Castroville, Santa Rosa, Cloverdale, Santa Barbara, Yuba City, Riverside, and Chico. Of the two cases in Redding, Dr. Miller writes that one of them was contracted from a dog carrying the infection in his hair to the child, who lived a quarter of a mile from where the other patient was quarantined. It seemed, however, that this dog was constantly by the sick man's side, and went from there to visit the child, to whom he was much attached. The disease was therefore attributed very justly to the visits of this canine, and is a good illustration of the danger that arises from the presence of animals in the sick room. In February the disease began to show symptoms of abating. No new cases appeared in San Diego; in Los Angeles the disease was also lessened in numbers, likewise in San Francisco. In Oakland only seven cases were reported, and in San Francisco the number had fallen to one hundred and fifteen, of these eighteen were Chinamen, fifteen of them importing the disease directly from China.

Reports were received that the disease was spreading in the interior of the State, from want of proper appreciation of the necessity of isolation and quarantine. The following letter was received on the eighth day of March, 1888, from Calaveras County:

WEST POINT, CALIFORNIA, March 8, 1888.

G. G. TYRRELL, M.D., *Secretary State Board of Health:*

DEAR SIR: A rather peculiar type of an eruptive disease has been infecting most all of the towns of this county, which, quite probably, has been reported to you before this; and I write you to know if this is the only locality of the State which has been subject to it. Being now at the time of the smallpox scare, of course these cases cause no little alarm. The cases in Mokelumne Hill and this vicinity seem to have originated from a case in Howe's Hotel, in San Andreas, where (and also at Murphys) they have had many other cases. I have a case here, in the midst of town, above one of the stores, which is a typical case, and which came directly from similar cases at Mokelumne Hill. Young man, about twenty-six or twenty-eight years old; taken down ten days ago; intense fever; temperature, $100\frac{1}{2}$ degrees; headache; vomiting; fever ranged from 103 degrees to 106 degrees for about two days and a half, when a slight eruption appeared on his forehead—little red papules, like beginning of measles. Fever came down to 100 degrees, in two or three days. This eruption covered his entire body, with hardly a place to put a pin's head; it enlarged to the size of No. 3 shot on the face and neck; on the hands, arms, and legs the eruption was as large as buckshot, semi-ovoid. Yesterday and day before (eighth and ninth days) they were pustular, and although I had not seen him for four days, I judged they had been in that condition for two or three days. Last night (ninth day) his temperature was 103 degrees. These pustules itch very little, but he is in great misery from the heat and burning produced.

If not smallpox it is at least a most revolting and loathsome disease. He is swollen all over his body, face particularly, so that he has not seen out of his eyes for three or four days. They tell me that very few pits are left from the cases around San Andreas or Mokelumne Hill. This is my first in this village. I am told that on the falling off of the scabs slightly elevated spots are left, as a rule, although quite often pits are left where the pustules were scratched. There is no noticeable odor. Dr. Murphy, of San Andreas, claims all the cases in San Andreas are *chickenpox*. Dr. Kelly, of Murphys, and Dr. Thompson, of Mokelumne Hill, claim them to be smallpox. Whatever their cases are mine is, for it *originated* from theirs, although this case is the most severe of any one so far. If it is chickenpox, why is he now, at the ninth day, not improving, instead of being covered from head to foot with five thousand vesicles, of a dirty yellow color, from the size of a No. 3 shot to buckshot, with temperature at 103 degrees?

If it is chickenpox, why were the premonitory symptoms so severe for three days, with temperature at from 104 degrees to $106\frac{1}{2}$ degrees before the eruption? The eruption is (if any difference) more marked on the face.

If it is chickenpox, is it not strange to have the vesicles of such a large size and in such large number?

If it is smallpox, there has been no fatal case, excepting a Mrs. Benson, of San Andreas, who had a premature labor at the same time.

If it is neither chickenpox nor smallpox, what is it? It certainly is contagious, and a disease that is at least undesirable in a community.

Very truly yours,

AUSTIN C. WRIGHT, M.D.

Upon receipt of this letter we replied that the disease described by him was undoubtedly *smallpox*. To have the place isolated, quarantined, and the premises disinfected; also to institute a general vaccination at once, or the result of negligence might be serious; and also to report regularly to this Board the progress of the disease. No word was received until the fourth of April. In the meantime I had written to him to know the reason why no communication was sent this office. The following is the doctor's reply:

MOKELUMNE HILL, CALIFORNIA, }
April 4, 1888. }

G. G. TYRRELL, M.D., *Sacramento, California:*

DEAR DOCTOR: Your letter of the second is at hand. I have not reported to you any of the cases which developed from the case I reported to you the fore part of last month, not from any dislike in giving the locality away, but from the fact that the cases that afterwards developed were of such a very mild form that I could not conscientiously report them as *smallpox*. There were four resulting from the primary case, three in the family in which he staid while sick, and one in that of a neighbor's. One was confined to bed two days, the rest were only indisposed a day or two, and were around town after three or four days after being taken down, and were never confined indoors, I am told, and with no more vesicles on the face and body than in an average case of chickenpox. One that had it *most mild* was a boy that had *never* been vaccinated. These were in West Point. The only cases in Mokelumne Hill were those in the Ashbury family, where there were eight, I believe, sick—at least these are all I have heard of. There have been no deaths at either places. I should be pleased to get some of the circulars on smallpox published by the State Board of Health, if you have any to spare.

I am yours fraternally,

AUSTIN C. WRIGHT.

As this disease seemed to be a subject of doubt, and was giving rise to a great deal of controversy among the physicians, and alarm among the citizens, at the request of our correspondent, Dr. J. E. Seymour Baker, the officials of Calaveras County summoned me by telegraph to settle the dispute. Accordingly, on March twelfth, we visited San Andreas, Angel's Camp, Duncan's Flat, and Murphys. We found that the cases in these neighborhoods were pronounced by Dr. Baker, of Angel's Camp, unequivocally smallpox, and as positively diagnosed as chickenpox by Dr. Murphy, of San Andreas.

This radical difference of opinion caused a great deal of ill-feeling among the inhabitants, which, unhappily, extended to the physicians in the county. Attended by Dr. Baker we first visited two children who were said to be coming down with chickenpox by the physician in attendance. We found them covered by the well marked rash of scarlet fever, with accompanying sore throat and other prominent symptoms. Across the ravine from this family lived a family among whom had boarded a man who had been six weeks confined to the house with what was pronounced chickenpox: he was then up and out. In this same house the landlady was confined, and died a week after. She left a baby that at the time of our visit was eight days old. Seeking the woman who attended this lady in her confinement, she told us that she had washed the dead body, and it was covered with a black rash, like measles, decomposition setting in very rapidly. Upon asking to see the eight-day old baby, we discovered it covered with papules, hard and shotty, just beginning to vesicate. This baby was seen by Dr. Baker two days after our visit, and vesication was general; in four more days the child died. Upon reaching Murphy's Camp we visited the hotel and there were shown a man in the desquamative stage of discrete smallpox, the crusts being, however, very thickly scattered over his face, arms, and body. In the same hotel we also saw the brother of this man, and also his son, who both had had the disease in a very mild form, the stains on face and hands being few. Across the street we examined a lady convalescent from the disease. She exhibited extensive stains on arms, face, body, and legs. She had been very ill for seven weeks, with what was designated by her physician as chickenpox. A little farther down were shown two children who were well covered with desiccating scabs, which had not yet dried upon their arms. These cases were also called chickenpox. We were now introduced to a bald-headed man, whose name has escaped my memory, who had several stains upon his head and face, who contracted the disease from two children in the hotel at San Andreas, whom Dr. Murphy declared had nothing but chickenpox. We now were shown several persons, young and old, who had the disease, and were now convalescent, and all presented the characteristic stains of the disease, some pitted, and others without any depressed scars.

Unhesitatingly we pronounced them all smallpox, and ordered immediate isolation and quarantine of those sick, and a general vaccination of those remaining well. Our declaration of the disease in this town was treated with most decidedly expressed unbelief; there were, however, a goodly few who thought that we were more likely to be right than wrong, and took steps accordingly.

Upon visiting and inspecting Angel's Camp we became satisfied that there was no smallpox in that town, neither had there been up to the time of our visit. We learned, however, that several cases were at Old Gulch and Sheep Ranch, but had not time to visit the ground and confirm the rumor.

We now visited San Andreas, where the disease first started. We learned that in the hotel a man from San Francisco stopped there over

night who was ill; next day he continued his journey. Some few days after his departure three or four children developed an eruption in a discrete form, these cases were unhesitatingly declared chickenpox by Dr. Murphy, of San Andreas, who attended them. The disease was evidently very mild, as the children were scarcely sick with it. However, the laundry woman who washed their clothes took confluent smallpox, according to the testimony of Dr. Kelly, an old and respected practitioner of Angel's Camp, and after a few days illness died. The local physician testified that she died from miscarriage. From this case several others arose, but all were in a very mild form.

On arrival in San Andreas I was assured by Dr. Murphy that there was not a case of sickness in town: but hearing there was a young lady ill with the "chickenpox" just out on her, we saw Dr. Murphy and asked his company to the house, that we might see for ourselves a case of this remarkable outbreak. Upon entering the dwelling, and the room where the young lady lay, we were hardly surprised to see the poor girl literally one mass of pustular eruption, each pustule as large as a pea fully distended, and so closely packed that some had become confluent. We asked the "doctor" if he really called this a case of chickenpox. He replied that "certainly it was: it was just the same as all the others he attended, but the pustules were thicker in number and larger in size." When I declared it a case of confluent smallpox, he said: "Then all the books are wrong, if that is smallpox." Upon further inquiry we found that both father and mother of the girl had had the disease in a very light form. The stains still remained on their faces, but they were convinced they had chickenpox only. We learned subsequently that the girl recovered, deeply pock-marked, and that her brothers, who were permitted to visit her after our declaration of the disease, both took the disease, and one died after a few days' illness of hemorrhage of the bowels; the second brother recovered.

During my stay several cases were presented to my notice, all giving undoubted histories and evidence of having had the disease which we now officially declared to be, unqualifiedly, smallpox, and requested the Supervisors to call a meeting, divide the county into districts, order all cases now existing into quarantine, appoint Health Officers over every district, provide for vaccination for everybody, and that by vigilance and care they might prevent the spread of the disease. Your Secretary regrets to say that although his advice was taken by the Supervisors, my declaration of the disease was not believed. Even the press denied the truth of our statement, and as a result in a short time they had the disease in the county jail.

In Murphys they did accept the advice of the Board of Health, and the disease soon disappeared: but throughout Calaveras County the germs are still there, only waiting for a favorable opportunity to break out with renewed violence.

Soon after our return from San Andreas we were summoned by telegraph to Watsonville, Santa Cruz County, to settle a controversy that had arisen between the *regular* and *irregular* practitioners upon the nature of a disease which had there broken out: the *irregulars* claiming that it was pustular eczema, while the Health Officer, Dr. Chalmers, with Dr. Ireland and Dr. Spence, regular physicians, asserted the disease to be smallpox. Upon my arrival, in company with these doctors we visited a Miss L—— (an eczema case) and found her in the desquamative stage of variola, the crusts being remarkably thick and numerous on her face, arms, and limbs. From this house we proceeded to visit a Miss A——, whom we found convalescing from quite a severe attack of discrete smallpox, the crusts being all detached, the stains remaining. Dr. Chalmers, the Health

Officer, had had both these places quarantined, despite the earnest protestations of the occupants. We next visited Mrs. F—— and daughter, about four miles and a half from the town. We found the mother recovered from an attack of discrete smallpox, and the daughter suffering from a severe attack of confluent variola, just maturing. We next visited a Miss P——, living at the edge of the town. She was just coming down with what promised to be a confluent case. At the time of our visit the disease was in the papular stage. All these cases were so indisputably smallpox that we had no hesitation whatever in officially so declaring them; advised strict quarantine, isolation, disinfection, and fumigation, with division of town into districts, house to house visitation, and general vaccination without charge. We afterwards met the skeptical "medicos" and explained the differential diagnosis between eczema and smallpox, and recommended to them a closer study of the disease hereafter.

In Eureka, Humboldt County, five cases of smallpox were reported during March. In San Francisco the number had diminished to twenty-three; four were reported in Oakland; in Stockton two new cases appeared, three in Redding, and two in Millville; cases also occurred in Oceanside, Los Angeles County, Downey, Monrovia, Ontario, Point Reyes, Gilroy, San José, Santa Cruz, Watsonville, Sisson, West Point, Duncans Flat, Murphys, San Andreas, Sheep Ranch, Alvarado, Merced, and perhaps some other points not reported, as we found that the desire for concealment outweighed by far the sense of injury it did to the public. Both individuals and officials were very reticent in announcing the arrival of smallpox in their vicinity, and as a consequence the spread of the disease was practically unlimited; fortunately the type of the disease was particularly mild: in fact, some of those attacked were not even confined to bed, which made the afflicted doubt that they had the disease, and the supposition was more in the direction of varicella than variola. By the first of July the disease had almost entirely ceased, there being but one case reported throughout the State, and that in San Francisco.

Although smallpox ceased to be reported, and to all appearances had died out, we are convinced that the disease only slumbereth, and that as the winter season approaches it will awaken with renewed life and activity, especially in those places where sanitary precautions were wholly neglected, and sanitary measures not taken to destroy the germs where they existed during the past spring. That specific exterior agency which we call infection is there present, and only awaits some peculiar meteorological changes, and those alterations in the human system whereby the blood becomes possessor of some material quality which renders it susceptible to the action of the poison, to develop into the characteristic disease. Whether the smallpox thus developed will remain of the same benign character which was so prominent a feature of the epidemic that prevailed this past winter is a problem that time alone can solve. If it should prove to be of a malignant nature, then indeed will California have cause to lament the apathy and indifference which permitted her local authorities to be so lax in their duties to the public.

DIPHTHERIA.

The reports during the past two years give conclusive proof that diphtheria is a permanent visitor in the State. Every month some town or other reports its presence, and until some coöperative effort is made to suppress it by those sanitary measures which have heretofore, in other places, proved successful, we may expect to see it propagated and kept alive, to the injury of the State and the sacrifice of many young lives that ought to have been

saved. We believe that the consensus of medical opinion is that diphtheria is never of spontaneous origin, but has its development dependent upon an infection from a previous case, and that whenever it appears among a community it is the result of exposure to the disease, either mediately or immediately. We find it in this State following the lines of travel. When it is severe in San Francisco it gradually radiates over the State, first attacking the centers of population, and then being carried into the remoter towns and villages. It prevailed during the fall of 1886 in several large towns in the State, sporadic cases constantly being reported in the smaller hamlets and villages. The general type of the malady was mild. In December of that year there seemed to be a recrudescence of the disease. In Maxwell, Colusa County, there was quite an epidemic of sore throat. In Sacramento, as diphtheritic croup, it was very fatal, and in San Francisco it seemed to have regained fresh vigor. During the spring months of 1887 it continued to be reported in various parts of the State. In Napa Dr. M. B. Pond writes that the cases were of unusual severity. As the winter approached the number of cases increased.

In October we received a communication from the Board of Trustees of Wheatland asking us to visit the town and decide upon a disease of the throat that was quite prevalent and alarming the citizens: a difference of opinion existing among the physicians as to its nature determined this course. Accordingly we arrived there on the afternoon of the seventeenth instant, and learned that a boy six years old had died, after a few days' illness, from what his attending physician called tonsilitis, and that several children were sick with the same disease. The public school was closed, and opinion was much divided upon the question of infection or non-infection. In company with the Trustees we visited the house of Mrs. S—, and learned from her that her boy, aged six years, was attending school: he came home with high fever, headache, and pain in his throat: his mother said that both his tonsils were covered with a white exudation, what she called a "thick coat of matter:" had no difficulty in swallowing, and no impairment of his voice: he was out of bed every day: slept with his brother, and latterly with his mother, and took, she said, plenty of nourishment: on the tenth day of his illness he became suddenly cold and covered with a damp sweat, lay over on the bed and died. The attending physician certified that he died from blood poisoning, the result of breaking of two tonsilar abscesses. This child's brother, who slept with him, a few days after had a chill, high fever, and sore throat. Upon examination exudation was seen on both tonsils, was very weak, but at no time had any difficulty of breathing or swallowing; he was now convalescing. The mother, who also slept with the child, had a sore throat, with, she said, a white deposit upon both tonsils. All these cases were pronounced tonsilitis by Dr. W—, the attending physician. Next door we visited a Mrs. H—, whose daughter, aged eleven years, was ill for seven days. Upon examination a well marked diphtheritic exudation was seen on both tonsils. The day previous, she said, a large piece of membrane had come away. She had no difficulty in swallowing or breathing, but had had high fever for four days: the fever is now subsiding and she is convalescing. Her physician, Dr. Melton, called her disease diphtheria. A brother of this young lady, living in the same house, had also a sore throat with exudation upon both tonsils: remains of exudation still visible, but the boy is convalescing. The mother of these children stated that she was taken with sore throat, without much fever, and recovered in a few days. We next visited the house of Mr. S—; found one girl with white patch on her tonsils: she had had fever, but was now able to be about. These three

houses were together in a row, and communication between them unrestricted. We next crossed over a couple of blocks to the residence of Mr. B——; examined his daughter who had been ill with fever and sore throat: it was still quite red, but the diphtheritic patches had disappeared. She had, however, some faucial paralysis remaining.

The disease began in the house of Mr. S——. Here we found the pump standing upon one edge of the kitchen sink. The pump well was a bored one, one hundred and nine feet deep, and cased with iron, as indeed were all the pumps we examined. The sink being under the pump, its drainage fell therein, and the dishwater, etc., was carried through this sink to a vitrified-pipe sewer, without any trap, and the joints of which were loose. This sewer pipe was connected with the sewer pipe from the next door. It was likewise untrapped, and nothing that could be seen prevented the entrance of the sewer air into the house. From this source it is possible the infection was conveyed. We next visited the school house, which was closed. The water used by the children is supplied by a cased pump, and over one hundred feet deep. The privies are at least three hundred feet away, and situated upon a slope inclining from the pump. We learned that all the stricken children attended this school, and Mr. S——'s child was there on the day he complained of being ill, and the subsequent day, when he went home to bed with a sore throat. The children, as a rule, bring their own drinking cups with them, but on the day of our visit three or four drinking cups lay in the trough under the pump spout, and we were assured that the children drank out of any cup that might be handy, without discrimination.

The history of these cases is that on Wednesday and Thursday the S—— boy was in school, with high fever and sore throat. His mother thought it nothing but a cold, and accordingly sent him next day to school. He afterwards was confined to the house, in bed. The H—— child was taken sick in the adjoining house the same day, and the S—— children in the adjoining house the day after. The following Monday the girl of Mr. B——, two blocks away, was taken with the fever and sore throat, which is strong evidence that all these cases were derived from Mr. S——'s child, the one first attacked. The Trustees very properly closed the school, until it could be officially ascertained what disease they had to contend with. Upon eliciting these facts, and carefully weighing all the evidence given by the parties interested, we had no hesitancy in writing a report for the Trustees, giving it as our opinion that the disease was diphtheria, the first case being virulent, the child dying on the tenth day of septicæmia. It was also our opinion that all the other cases observed were diphtheria in a milder form, and that there was no tonsillitis, except that inseparable and usual with faucial diphtheria. We advised that the school house be immediately and thoroughly disinfected and fumigated, under the superintendence of a competent person, and that no child be admitted until this was perfectly accomplished. That all the houses and clothing where the disease had existed be also disinfected and fumigated, and that none of the convalescent children be permitted among the other children for at least two weeks longer, and not then except the Trustees were perfectly satisfied that disinfection had been fully accomplished. We also strongly recommended the appointment of a competent Health Officer, with power to have the town thoroughly cleansed and disinfected; the privies abolished, and earth closets substituted; the cess-pools emptied and cemented, to prevent soil pollution, and that they be again emptied every few months. The directions being in a great part acted upon, the disease disappeared in a short time.

We have related the incidents of this visit to show how easily a disease may attain even epidemic proportions from neglect of the first case, or ignorance in determining its nature.

In a place called Pine Creek, some eight miles east of Cana, and sixteen miles from Chico, an outbreak of diphtheria occurred about December. Dr. Harvey, of Vina, had twenty-eight cases, with two deaths. The first two cases came from the foothills. Dr. O. Stansbury, writing from Chico, says: "We would wonder, if we knew the locality where these cases were reported to have been, that the disease should exist there, as it is very near the foothills, sparsely settled, and where we would naturally suppose the drainage to be good."

We were unable to ascertain the history of the two cases from the foothills, from which the disease spread: but the lesson teaches us that neither sparseness of population, good drainage, nor elevation will prevent the spread of diphtheria, if general prophylaxis is neglected.

Dr. J. H. Miller, of Redding, reports in November, 1887, an epidemic of laryngitis, with kindred throat and bronchial inflammations, with six deaths attributed by him to the hot days and warm nights and the constant cloud of dust in the principal streets of that city. "One autopsy was made and the disease," he says, "definitely ascertained to be *true croup*." The doctor says it was not diphtheria: that the prevailing disease was laryngitis, with or without exudation. In the present state of medical opinion, we fear the verdict would be diphtheria.

In December a limited epidemic of diphtheria occurred in and some few miles from Suisun, which were under the care of Dr. Downing; some of them proved rapidly fatal. Their origin was not traced; the disease continued for a couple of months, when it gradually subsided.

In April of this year, in Rocklin, quite an epidemic of the disease prevailed. Dr. H. E. Stafford reports forty-four cases, with many other cases of sore throat, which, although quite mild, were probably diphtheritic. The origin of the disease was traced to a family whose sanitary condition was of the worst possible description. From this family, it was communicated to neighbors' children, who were playing close by. Another factor, in the spread of the disease, was an open sewer or ditch, that was used as a receptacle for a large portion of the filth of the town, and from which was constantly exhaled a most offensive odor. Owing to the comparatively dry winter, this drain was not washed out as usual by the winter's rain, and hence its putridity. If an example was needed of the close relation that filth bears to disease, it may be found in the history of this epidemic in Rocklin. Founded in filth, fostered in an insanitary home, the germs cultivated and diffused by the decomposition of animal and vegetable matter in an open ditch, polluting both air and soil, the result could be no other than it was, with its attendant deaths, that might have been prevented.

In a letter received from Dr. A. J. Comstock, of Ventura, he describes an outbreak of measles complicated with diphtheria. As the doctor's description is very interesting, we will take the liberty of transcribing it. He says: "The first case was that of a child brought by its mother from Monrovia, Los Angeles County, and the mother thinks it was exposed on the train, there being a sick child in the seat next them, which was feverish and had an eruption on the skin. Her child was taken ill two weeks after reaching here. The first symptoms were sore throat, enlarged cervical glands, high fever, prostration, but with this, coryza congested conjunctiva, and other prodromes of measles. Put child on treatment for diphtheria: second day eruption of measles appeared. The child was taken down in a small country house where there was a family of five

children who had never had the measles. Two other families (relatives) were exposed the day the child was taken sick. Nine children of the several families exposed were taken in due time with the measles, and all complicated with diphtheria, most of the cases being the nasal form. One died of membranous croup in this county: one was taken to Monrovia and died of membranous croup. These two were brothers; one two and a half years, the other four years old. All the older members of the family had diphtheria more or less severely. Several are under my charge, still being very dropsical, and passing large amounts of albumen in their urine. Some of the children had albuminous urine with dropsical following, as well as different paralyses among them all. Have managed to confine the disease to the three families mentioned. I consider it remarkable to see the two poisons (measles and diphtheria) break out in the manner stated. It would not seem so strange were it scarlatina and diphtheria."

From the history of these cases we are led to believe that it is possible for two different poisons to be present in the system at the same time, and manifest their presence by their peculiar symptoms; what the unknown factor is that inhibits dual disease in the majority, and permits it in the few, would be an interesting problem to solve. The power of producing this disease has been ascribed to as many different causes as there have been conditions under which it has been observed. It has been generally described as a *filth disease*, that is to say, that it owes its existence to sewer gas, cesspools, impure water, decaying vegetation, overcrowding, etc.; but such is not, we believe, the fact, as cases have occurred and death has entered into homes where no such conditions existed. It is found on the tops of mountains and in secluded valleys, where no possible condition likely to give rise to the disease existed. We are therefore led to infer that it is not dependent upon conditions for its existence, but is a disease produced by a pathogenic micro-organism, and therefore does not originate spontaneously, as we believe no combination of unhygienic conditions can originate life where none existed before. Although the presence of the living germ is necessary to produce the disease, there must be also an unknown factor in the individual, in order that it may germinate and grow. What that factor is, we know not, but we do know that unhygienic conditions, emanations from decaying organic matter and other filth, produce in the human body a deterioration that renders it susceptible to disease whenever it comes in contact with disease germs.

As sanitarians we are concerned as to the means of preventing infection, diphtheria not being an emanation from the unknown, but a something which is carried from place to place. Isolation is, therefore, one of the most reliable means whereby the disease is limited. Unfortunately this preventive means cannot be complete until the public mind is impressed with a belief in the contagiousness of the disease, and that, unlike small-pox, one attack does not secure immunity from a subsequent one. Precautions will then be taken to limit the visitation of the sick by the well; to prevent children attending school when diphtheria is in their dwelling; to remove all carriers of contagion, and all conditions likely to foster the disease or propagate its germs. We would recommend, as a means to this end, that the Legislature pass a law making it compulsory on physicians and householders to notify the local authorities, whenever a case of diphtheria occurs within their knowledge, and then designate the place of its location by a distinctive card or flag, to warn the public that contagious disease is within. It should also be made compulsory to have every house, in which diphtheria has been, disinfected and fumigated, together with the

persons occupying the same. By these means we may hope, in accordance with the completeness with which the means are used, to restrict the spread of a disease which is more fatal than smallpox, and, perhaps, less under the control of therapeutic treatment than any disease now known.

SCARLET FEVER,

During the past two years, although present in the State to a greater or less extent, has shown no tendency to epidemicity or any extreme malignancy. In the fall of 1886 it was noticed in a great many towns, but the type was so mild that scarcely any fatality attended it. The infectiveness of this disease is exemplified by a case that occurred in Fort Bidwell. Dr. Kober writes that the disease was conveyed from Warren Valley, in Oregon, sixty miles away, by an uncle of the child, who, having been exposed to the disease, came into the fort and slept upon a bedspread upon the floor, in the residence of the child. Next day the child played upon this spread, and ten days after developed the fever and died. Under the complete sanitation employed by Dr. Kober, the disease was confined to this one case. At a later date Dr. Kober writes: "I was in hope that by proper sanitation, scarlet fever would be limited to an isolated case or two; but, unfortunately, the family, unknown to me, had aired the bedding before I got it disinfected, and, as a result, twenty-six persons were attacked, with six deaths." He further says: "Two of the fatal cases were terrible from the very start, although contracted from mild cases."

In another instance, related by Dr. Edward Gray, of Benicia, he says: "The disease (scarlet fever) suddenly made its appearance in town June second. Next day it appeared in two other families, and finally in two more. In my opinion, it originated from the contact of some of our townspeople and children with the participants in the Caledonian picnic held May twenty-fifth, at Shell Mound Park, Oakland. Twelve cases were developed, of which two died. As these cases occurred simultaneously, eight and ten days after exposure, and all occurring in those attending the picnic, the conclusion is almost irresistible that such was its origin."

Dr. Adams, of Ione, also relates the instance of an outbreak of scarlet fever in his town. Its origin was traced to a family who had scarlet fever some months previously, but who attended a picnic without taking any precaution to have their clothes disinfected before doing so. The disease attacked sixteen children simultaneously, and some forty-eight persons were attacked with sore throat forty-eight hours after the picnic, at which ice cream was freely dispensed. It is possible that some connection existed between the fever, the sore throat, and the ice cream, but Dr. Adams was unable to trace it.

Some few cases of scarlet fever were reported in Hopland by Dr. H. G. Pike, but the type was exceedingly mild, and called for no comment. Indeed, the remarkable features about the scarlet fever of the past two years was its sporadic character: usually so communicable its limited extension was so marked as to excite surprise. Why the disease should be so virulent and fatal at one time, and so mild at a subsequent manifestation, is one of the problems of medicine that await further research.

In London, where, in 1887, the disease was epidemic, as many as twelve hundred cases being in hospital at one time, its spread was attributed to the unusually warm weather prevailing at the period.

In this State, during the same period, the weather was very much warmer, yet it did not increase the prevalence of the disease, nor cause its extension beyond its original place of development. Some cases, however,

have occurred and attended, we regret to say, by fatal results, from the carelessness of those upon whose premises the disease existed. In one particular case a gentleman was visiting a family in which scarlet fever prevailed; he was not made aware of the fact, and unconsciously conveyed the germs of the disease to a distant part of the city; there he infected a friend's child who died after a few days' illness. The examples of contagion conveyed almost incredible distances, warns us that some means ought to be provided by law whereby the dissemination of disease could be lessened, if not wholly prevented. It should be made a penal offense to have any infectious disease within a house without a notification to the public, either by a card outside the house or a colored flag hanging in some conspicuous place, to warn the visitor or the traveler that infection was within. This warning would have saved the valuable life above alluded to, and if adopted would lessen the spread of disease most materially. It is done in smallpox, not half as dangerous a disease as diphtheria or scarlet fever, and why not have the same rule applied to scarlet fever and kindred contagious diseases?

MEASLES

Were entirely absent from the State during July and August, 1886. In September a mild type of the disease appeared in Napa County. It was next heard of in Monterey County, Mendocino County, and Shasta. The disease gradually spread until measles prevailed everywhere, but it was not until December of 1887 that it became really epidemic. It prevailed extensively in Sacramento, Oakland, San Francisco, and all the larger cities. In February of 1888 it became quite severe, and in many cases the eruption was mistaken for that of smallpox, being so very dark and markedly papular. The fact has been noted that smallpox is often preceded or immediately followed by measles. This was the case in the great epidemic of 1670, when, according to the observations of Dr. Thos. Sydenham, the measles of that date introduced a kind of smallpox, which he chose to entitle "anomalous smallpox," as he found it different in some particulars from the epidemic form that preceded it. This distinguished physician was the first to describe the difference that existed between smallpox, scarlet fever, and measles, and laid down rules to distinguish one from the other. Up to this time measles and smallpox were often described together, as if one was a modified form of the other. During the prevalence of smallpox it was remarkable the number of cases of measles that were mistaken for smallpox, and in some instances quarantined for that disease. The chief characteristic of measles during the past two years was the generally mild nature of the attacks, and the rarity of the malignant type during the period.

TYPHOID FEVER,

During the years 1887-8, was remarkable for the general sporadic nature of the disease wherever it appeared. There seemed to be no tendency toward epidemicity, and the examples were generally traced to some local cause. It is becoming more and more evident that without a specific cause, typhoid fever would become extinct. During the fall and winter of 1887, typhoid fever was reported as prevailing extensively in Sierra City, but inquiry made of Dr. Jas. Tully contradicted the truth of the assertion. He writes that the disease reported as typhoid was really a remittent fever that ran a course of from ten to twenty-one days. He further says that he saw but one case of genuine typhoid fever during the summer. He con-

siders the frequency of the remittent fever to lack of sewerage and the pollution of the small streams and marshes by refuse matter.

In San Diego, during the fall 1887, typhoid fever was reported as prevailing to a great extent. Dr. T. L. Magee, Secretary of the San Diego Board of Health, in reply to a letter of inquiry from Dr. Orme, President of this Board, admits that there were quite a number of cases of fever from time to time, but characterizes them as non-specific continued fever, although he confesses that some practitioners called them typhoid, and others typho-malarial fever. In a letter received from Dr. Huntingdon, United States Army, in medical charge of the garrison at San Diego, and a practitioner of thirty years' standing, he states that in the barracks during the past few months he has treated four cases of undoubted enteric fever. One in a girl thirteen years old and three among the soldiers. He believes that the girl contracted the disease by frequent visits to a part of the town suspected of being infected, and in the soldiers the infection undoubtedly occurred outside of the garrison and by frequenting places of insanitary reputation. He also reported seven cases in private practice, and is of the opinion that typhoid fever is quite prevalent in San Diego: " * * * Like all new and rapidly growing places, San Diego is and will be prone to the reception of all kinds of disease, incident to the presence of filth and the want of sanitary care, but it is to be hoped that the completion of our new sewerage system will make a change for the better." Since that letter was written the new sewerage system has been completed and the health of the city materially improved, neither typho-malarial, typhoid, nor remittent fever have been reported, except in the sporadic form, and from the admirable system of sewerage, and the very efficient Board of Health and its excellent and energetic Health Officer, Dr. Gochbauer, we expect San Diego will become one of the healthiest cities in the State and the least subject to any of those diseases which are bred in filth and matured in insanitary conditions and surroundings.

We do not think that in this day there can be any question as to the intimate relation between filth and disease, and although it may not be always possible to trace cause and effect, yet it is an undoubted fact that the decomposition of organic debris, animal or vegetable, causes pollution of both air and soil, and is a constant source of deterioration of health, even where actual disease is not the result.

Although it is now a generally observed fact that typhoid fever is closely related to dry seasons and coincident with low water in wells, yet these two past seasons in California did not develop any unusual prevalence of typhoid disease, although the weather was dry until late in the year. As a knowledge of the disease and the necessity that exists for disinfection of the discharges from the bowels becomes a matter of common education among the people, we will find that typhoid fever will be confined to the few, and to those who persistently pollute the soil about their houses with slops, garbage, privy vaults, and cesspools improperly constructed, who will not be persuaded that a well fifty feet from a privy can be contaminated by percolation through the soil, or who declare that excreted discharges are perfectly harmless when deposited in the privy vault. It is only through such people that the germ is propagated to the injury of those who unfortunately or inadvertently are brought in contact with them.

Investigation shows that polluted water is the most prolific source of disease in the human family, especially of typhoid fever, and numberless epidemics of this disease have been directly traced to a well polluted by surface drainage and infected with typhoid fever germs. One of the most important facts yet discovered in the pathology of typhoid fever is the detec-

tion by Birch-Hirschfield of germ spores in his stained cultures of bacilli. Gafky found that in potato cultures, kept at the temperature of the body, spores were formed. They were also observed by Sternberg, Flugge, and others; but this is denied by Buchner, Michael Simmonds, and some other experimenters.

Another important discovery was made by Prudden, and that was that typhoid germs were capable of growth and propagation after one hundred and three days' freezing in ice; hence, the importance of seeing that our ice is supplied from sources that are absolutely free from the possibility of sewage contamination. It has also been determined that germs exposed to a heat of 56° C. are not destroyed, and the same investigation showed that alternate thawing and freezing did not destroy the germ. It was also demonstrated that these germs will grow in various media. Milk is one of their favorite culture grounds, and some of the most formidable epidemics have been inaugurated by milk which had been contaminated by the bacillus of typhoid. We must, therefore, in seeking the causes of typhoid fever, look beyond the sewage, and examine carefully the water and milk supply, as these carriers of disease may be polluted from sources that were not even suspected.

As an extended knowledge of what is known as "Heisch's test" would enable every one familiar with it to test in a general way the potability of water, we here insert it: Take six or eight ounces of the water in a *perfectly clean* bottle, and add to it fifteen or twenty grains of the purest white sugar. The bottle must be filled with the mixture and the cork tightly adjusted, so as to exclude the air completely. It is now placed in a warm situation for forty-eight or seventy-two hours. If after twenty-four hours have elapsed the transparency of the water be noticed to have been disturbed, or if it has become cloudy or milky, or if any bad smell or fermentation has developed, the water should unhesitatingly be rejected as unfit for drinking. It is contended by Heisch that the cloudy appearance in the water at the end of twenty-four hours is positive evidence of sewage, or putrescible contamination. This test, so simple that any one can employ it, ought to be applied to every water used for drinking purposes, as, if not perfect as a test, it at all events gives warning that enables us to have such suspected water analyzed by a competent chemist.

MORTUARY STATISTICS.

For the fiscal year from June 30, 1886, to June 30, 1887, the number of deaths reported to this Board were ten thousand three hundred and sixteen, inclusive of three hundred and fifty-seven still-births, the average population being five hundred and seventy-six thousand six hundred and thirty-eight. This gives us an annual death rate of 17 per cent. Owing to our deficient, we might say useless, registration law, it is impossible to collect all the deaths in the State.

The estimated population of the State being one million and a quarter, or perhaps a little less, we calculate that we have succeeded in collecting more than half the deaths that have occurred within the fiscal year. As those towns and villages that have failed to make any returns are small, and whose mortality is very limited, we are justified in believing that six thousand deaths would amply cover their death rate in the year. With this calculation we estimate our yearly death rate for the entire State to be 13.50 per thousand, which will indicate the extreme healthfulness of California during 1886-7, as far as our imperfect statistics can do it.

If we could only impress our legislators with the necessity that exists for

a registration law that would make the returns for mortality a certainty, we would be able to present to the public a report that, being accurate and without exaggeration, would astonish the people of the Eastern States at the salubrity of our climate, and the consequent smallness of our mortality from any epidemic disease. Among the ten thousand three hundred and sixteen deaths recorded we find—

Consumption was fatal to sixteen hundred and seventeen—a percentage of fifteen of all deaths registered. If we compare this percentage with that occurring in the Eastern States from the same disease, we will find that although from the number of persons affected by this disease that annually come to us, we would expect a large death rate, our percentage is much smaller than in most of the Eastern States.

That the favorable conditions of our climate in enabling consumptives to pass the greater part of the year out of doors, is a prominent factor in prolonging the lives of those suffering from tuberculosis, there can be but little doubt, as very many of those coming from the East are in the very last stages of the disease, and yet, under the invigorating air of California, they gain strength and flesh, and perhaps live as many years as they would months in the climate from which they came. Among the sixteen hundred and seventeen deaths registered we find four hundred and ninety-seven natives of the Atlantic States; six hundred and four foreigners; three hundred and nine natives of the Pacific States; one hundred and forty-two of these being under ten years of age, and two hundred and seven whose place of nativity was unascertained. We are justified, therefore, in asserting that the large majority of those dying of consumption in California come to the State already infected with tubercle, and that these infected people are a possible source of infection to others, and tend to develop the disease in those of a scrofulous diathesis, who may be obliged to remain in contact with them, socially or otherwise.

Pneumonia, or acute inflammation of the lungs, caused six hundred and eleven deaths, less than one third of the deaths attributed to consumption: a percentage of 5.92 of all deaths recorded. Pneumonia has not been epidemic within the State during the year, or, indeed, very prevalent in any particular place. The seacoast and the higher altitudes furnished the greater number of cases, the temperature being lower and the humidity greater than in the interior counties.

Bronchitis was productive of one hundred and eighty-six deaths, ninety-nine of which were children under ten years of age. The months showing the highest death rates from this disease were the winter months of December, January, and February, and the largest mortality in those over sixty years of age. Bronchitis, like pneumonia, is much more prevalent in the mountains and along the seacoast than it is in the valleys, the snow line of the former and the humid fogs of the latter bearing a close relation to the frequency of the disease.

Diphtheria, which seems now to be endemic in the State from causes that should not exist, produced death in three hundred and seventy-six instances recorded. If we add to this number at least three hundred more that were not reported, we will approximate very nearly the number of deaths from this disease in the State. If, for a moment, we reflect that all these deaths from diphtheria might possibly have been prevented by proper sanitary precautions against the spread of the disease, and preventive measures against its introduction, we are forcibly impressed with the necessity that exists for properly organized Boards of Health, officered by men who are conscious of the great responsibility that devolves upon them to save the lives of helpless children from this fell destroyer. Among the deaths

here recorded, we find no less than three hundred and three were under ten years of age, forty-four under twenty, and ten under thirty years old. All young, from the infant in the cradle to the man in vigorous life, alike were consigned to an untimely grave.

The largest number of deaths occurred in San Francisco, where the disease prevailed to a greater or less extent during the entire year. Its highest death rate was in November, December, and January, when the deaths averaged nearly thirty-eight a month. The lowest death rate was in July, August, and September, when the average deaths from diphtheria were a little over seven a month. By this we learn that oedema, which naturally occurs among the poor in large cities during the winter months, is probably a constant factor in the spread of this disease. Practically we find it impossible to isolate diphtheritic patients among the poor; crowded, as they are, in one or two, or, at most, three rooms, with half a dozen children, intercourse cannot be forbidden with success, and until we are able, through public sentiment, to build hospitals for this class of patients, diphtheria must occur and spread, to as great a danger of the wealthy patron as to the poorest tenant.

In the interior towns and cities the disease was mostly sporadic, in no place did it rise to the dignity of an epidemic. The general public is now so well instructed in the contagiousness of the disease that physicians find little trouble in enforcing sanitary regulations in the destruction of all articles used by the patient, and in general fumigation of the premises, where such is possible; of course, in crowded tenements, it cannot be done with satisfaction, but the attempt is better than none. It should be a law of the land that every house or tenement having within it a case of contagious disease should be compelled to give a notification of the fact to the health authorities, or other appointed officers, and at the same time exhibit a distinctive flag or written card to that effect.

Croup is credited with one hundred and sixty-four deaths during the year, being nearly half as many as died from diphtheria. As the evidence accumulates we are approaching the time when there will be no distinction made between diphtheria and membranous croup, their identity being firmly established. We notice in our reports that wherever a death from membranous croup is reported there will be found diphtheria in the neighborhood. This is without exception the rule, and no stronger evidence of their co-relation can we think be found than this very fact.

Scarlet Fever.—The deaths from scarlet fever during the year were sixty in number, which shows how very mild the type was in those attacked, the percentage being a fraction over half of one per cent of the total deaths. The most difficult duty the sanitarian has in this disease is to convince the public in the first place that there is no difference between scarlatina and scarlet fever, that they are in fact one and the same disease. The next difficulty to overcome is to convince those afflicted that they are as likely to have serious consequences ensue after a mild attack of the fever as after a severe one, and that infection can as readily be conveyed by the patient not sick enough to go to bed as by the sufferer from the most malignant type of disease. In consequence of this very general obtuseness of the public we have scarlet fever in our schools, traveling in our street cars and railway trains, playing on the streets, and sitting in our churches and theaters. It will continue until that peculiar something comes in the constitution of the body that determines the type to take on malignancy, and then, when death is sown broadcast, the sufferers will learn the value of isolation, disinfection, and fumigation.

Measles, although prevailing to a large extent, occasioned but thirty-four

deaths. The highest mortality in any one month being in April, when five deaths were recorded: three of the deaths occurred in adults, as a result of capillary bronchitis complicating the disease. If we compare this mortality with that of some Eastern States, we will appreciate how little we suffered from death in this prevalent disease. In the report of the State of New York for 1887, we find that in the three winter months nine hundred and nineteen deaths were reported, and fifteen hundred for the year from measles. In Wisconsin the deaths averaged 2 per cent, in Illinois 2.21 per cent, in California the deaths averaged nearly one fourth of 1 per cent. No part of our State has been exempt from measles at some period or other through the year, but the type was so mild and the meteorological conditions so favorable that, as is seen above, death rarely ensued except from some secondary cause.

Whooping Cough caused as many deaths as scarlet fever and a few over, sixty-four deaths being attributed to it. They all occurred in children under five years of age. It has occurred during the year in various parts of the State, and was quite prevalent during the winter and spring months. In some localities it was epidemic.

Cholera Infantum was the cause of two hundred and sixteen deaths. That this disease depends much upon meteorological conditions and the result of heat upon food, we will endeavor to show by recounting the deaths by months of the fiscal year. In July, the deaths were forty-seven: August, twenty-nine: September, twenty-seven: October, sixteen: November, ten: December, eight: January, three: February, three: March, one: April, six: May, fourteen: June, forty-three. It will thus be seen that as the summer and autumn season waned, so did cholera infantum, and when the temperature began to rise in April, cholera again appeared in increasing numbers on our mortality list, and attained its maximum in June and July, the warmest months in California.

Diarrhœa and Dysentery prevailed to a greater or less extent in every part of the State, but nowhere in what might be termed an epidemic form. They produced only one hundred and eighteen deaths, not quite 1½ per cent of the total mortality, which is strong evidence that the diseases had no malignancy in their character. We have no doubt the frequency of these diseases could be materially lessened if those suffering from them had taken even ordinary precautions to avoid the cause. Much of it was undoubtedly provoked by insanitary conditions: by decaying vegetable and other garbage polluting the water used for drinking purposes: by exposure during the summer season in sleeping out of doors upon the damp ground: by eating quantities of unripe and too ripe fruit: by overheating and then drinking large quantities of iced or very cold water. People that avoided these sources of bodily disturbance and stomach disorders did not suffer from diarrhœa or dysentery, although living under the same meteorological conditions and exposed to the same thermal inconveniences. Fortunately for those attacked, the type was particularly mild, and readily yielded, in the great majority of cases, to simple household remedies, or the greater skill exercised by the family physician.

Typhoid Fever.—Two hundred and eighty-nine deaths were reported as being caused by this undoubtedly prevalent disease. If to these we add the twenty-one deaths ascribed to what is called typho-malarial fever, which is now generally conceded to be typhoid fever running a somewhat different course from the ordinary enteric fever, we have a sum total of three hundred and ten deaths from the disease, or 3 per cent of the total mortality. The largest number of deaths, forty-five, occurred in October. In August there were thirty-six, and in September and November twenty-

eight each. The remaining decedents varied from fourteen to twenty-two monthly. This is a very small mortality, and testifies to the mildness of the fever; indeed, there was no tendency to epidemicity, the cases being all sporadic and endemic. The diffusion of knowledge by the State Board has, it is believed, put the public upon its guard against the spread of this fever by causing the adoption of strict measures of disinfection of all the excretions of the sick, and having a careful regard to the sources of the drinking water, as it is in the vast majority of cases due to polluted water that the fever arises. It is true that with a large class of persons it is difficult to make them believe that bright, clear, sparkling water could carry within it the seeds of disease and death, or that such water could be contaminated by seepage of house slops or outhouse drainage. The Board, however, has hope that by continuance of precept upon precept and line upon line, to so educate the great mass of intelligent people in California to the fact that typhoid fever is a matter of choice and determined by sanitation that in the near future, insanitary dwellings and surroundings will be the exception and not the rule, and as a consequence the elimination of typhoid fever as one of the causes of our mortality. There are few diseases whose origin is more certainly known, and with this knowledge we ought to be able to remove the cause.

Smallpox.—For many years the State was free from smallpox, but in February, 1887, it was introduced from Mexico into Los Angeles, and there caused sixteen of the deaths recorded from the disease. In June we find that two deaths occurred in San Francisco, where the disease was introduced by the Chinese. Up to this time it had not infected any other parts of the State.

With this partial review of the causes of death in the fiscal year 1886-7, your Board will learn that the State presented a very healthy condition of its inhabitants. Its mortality was small, it was free from any dangerous epidemic disease, and the work of the State Board was becoming appreciated by the public. We will now present for your approval a—

REVIEW OF THE FISCAL YEAR 1887 AND 1888.

We find recorded during this period twelve thousand three hundred and twenty deaths. The average population being six hundred and eighty-four thousand three hundred and twenty-two per month, and the average deaths one thousand and twenty-six, the percentage would be 18; but if we add six thousand deaths not returned, which is a large estimate, our death rate would average for the year 14.6 for the whole population, which is a trifle over the calculation for 1886. Owing to the slight increase of deaths, we find that—

CONSUMPTION

Caused one thousand eight hundred and thirty-two deaths, an increase of two hundred and fifteen over the previous year. This may be accounted for by the large immigration into the State during the year—seven hundred and eighty-two of the deaths being among foreigners; five hundred and eighty-three in persons from the Atlantic States. Only three hundred and fifty-five died that were born in the Pacific States. We thus infer that the increased mortality from consumption was among those who sought our equable and invigorating climate in the vain hope of restoration to health.

PNEUMONIA

Also shows an increase in deaths, one thousand and thirty-nine being recorded, an increase of four hundred and twenty-eight over the record of 1886. We can account for this record when we remember the increased area of the State heard from and the larger population reporting. The disease was quite prevalent from October, 1887, to June, 1888, in most of the coast towns, and was especially noticeable in San Francisco. It was not epidemic anywhere in this State, but was observed as occurring in sporadic form with great frequency.

BRONCHITIS

Caused two hundred and sixty-two deaths, which is also a larger mortality than the preceding year, one hundred and forty-five being infants under one year of age. The disease, therefore, was not prevalent nor fatal to any extent among the old, where its lethal effects are chiefly felt, only thirty-six persons over fifty years of age succumbing to it.

DIPHTHERIA.

During 1887-8 the number of deaths reported were three hundred and fifty-eight, which, added to two hundred and three from membranous croup, makes the sum total of mortality from these twin diseases five hundred and sixty-one, which is very little in excess of the mortality of the preceding year.

WHOOPING-COUGH,

Although quite prevalent, caused but forty-two deaths—evidence of the mildness of the type or the constitutional robustness of those attacked. It prevailed more particularly during the spring and summer months, when the weather was most favorable for its treatment by outdoor exercise.

SCARLET FEVER,

Although quite prevalent in many parts of the State, preserved its mild type and endemic character. Fifty-nine deaths were recorded from it during the year. The months of its greatest fatality were January, March, May, and June, which is strong evidence that meteorological conditions play but a small part in the etiology of the disease, and that its fatality depends more upon the constitutional condition of those affected and the virulence of the poison imbibed than upon the question of season or condition of the weather.

MEASLES,

During the year, became epidemic in many places, and was especially prevalent during November, December, January, February, March, and April. The number of deaths recorded for the year was one hundred and thirty-nine, which indicates the extent of its prevalence and the pernicious effect of winter weather upon its results, as we find that in November there were but four deaths, in December eighteen, in January thirty-five, in February twenty-three, in March twenty-eight, in April thirteen, in May six, and in June two. There were twelve deaths in adults between twenty and forty years of age, the remaining one hundred and eighteen being in children under ten years. As the epidemic was scarcely severe enough to ex-

haust all the susceptible material, we may expect a recrudescence of the malady during the coming fall and winter months.

SMALLPOX.

Smallpox, as before stated, made its appearance early in 1887, and during the fiscal year to June 30, 1888, caused ninety-four deaths. The greatest mortality was during the months of December, January, February, and March, when seventy-five deaths occurred. Only two deaths were reported in May and none in June. There were other deaths from smallpox in the State that were not reported. In Calaveras County smallpox was quite prevalent, and several deaths occurred from it, but were not reported, as, unfortunately, our registration law is in such condition that no penalty can be enforced for its disobedience. If this type of the disease had not been of the very mildest character, and devoid of any epidemic tendency, the spread of the disease would have been unlimited, and the death rate consequently increased.

CHOLERA INFANTUM

Caused two hundred and fifty-one deaths, the largest mortality in any one month being in October, 1887. This was owing to the very abnormally warm weather during that month. In the northern end of the Sacramento Valley, according to the Signal Service reports, the temperature was nine degrees above the normal for the month. The deaths in October were fifty-one. In November, when the temperature was lower, but still warmer than normal, the deaths decreased to twenty-five, and in December, when the temperature was only one degree warmer than normal, the deaths were recorded as eight, and in January had fallen to five. Temperature has, therefore, an undoubted influence in the evolution of cholera infantum, and, when combined with insanitary surroundings, has much to do in determining its fatality.

DIARRHŒA AND DYSENTERY

Were quite prevalent throughout the year, and occasioned one hundred and fifty-nine deaths. These diseases were generally observed to be of a mild character, and readily controlled by suitable remedies. The greatest fatalities occurred in October and November, when the weather was abnormally warm, and it seemed, as in cholera infantum, to determine the increased death rate.

SCARLET FEVER,

In an exceedingly benignant form, was present in various parts of the State; it produced only fifty-nine deaths that were so reported. The greatest mortality was in January, when ten deaths were reported. There were nine in March, May, and June, which indicates that temperature has but little influence in determining the result of the disease. There was no epidemic tendency manifested in those places where the disease was observed, and the deaths that occurred were oftener from the secondary results appertaining to the disease than from the malady itself.

TYPHOID FEVER

Was a little more prevalent during 1887 and 1888 than in the previous year, the deaths being four hundred and fourteen—an increase of one hundred and twenty-five; but this may be accounted for by the increased

number of precincts heard from, and the consequently increased estimated population. The largest number of deaths was in the winter months of November, December, and January, when fifty-eight deaths were recorded for each. In August, September, and October, the average was thirty-one in each month, and was only exceeded by June, when thirty-seven deaths were reported. We are led to conclude that local conditions determined the result in these cases, rather than the season: as usually the frequency of the disease and its fatality is greater in the fall than in the winter, although it has been remarked in San Francisco that the advent of the rainy season increases the disease, and that during the winter months there is experienced the greatest mortality.

CEREBRO-SPINAL FEVER

Is credited with one hundred and forty-four deaths. The cases were all sporadic, and occurred in different parts of the State; as far as learned, there was no tendency to epidemicity, which is one of the characteristics of cerebro-spinal fever in its infective form, and therefore it is open to doubt as to whether the disease was properly classified or not. Eighty of these decedents were under five years of age, which increases our doubt as to the correct nomenclature.

MENINGITIS.

We find that under this head there were recorded two hundred and eighty-nine deaths, of which one hundred and ninety-four were under five years of age, and ninety-five over that age. This classification includes the tubercular as well as the purely inflammatory form of disease, and no deductions can be drawn as to their relative frequency, except by considering the age of the decedents.

Before concluding this report, we must call the attention of the Board to the fact that, as yet, no work has been done upon our—

MINERAL SPRINGS.

The mineral springs of this State, containing, as they do, every quality of water that has made the continent of Europe so famous, are now hardly known outside the area of their distribution, and for the simple reason that no reliable and State analysis has been made to determine their medicinal properties. Some of our springs have such a reputation within the State that they are visited from all quarters of it, and hundreds derive the greatest benefit: again they are visited by those whose maladies are not benefited by the waters, but rather aggravated. Such cases are not only injured themselves, but they do injury to a valuable remedial agent, by decrying as valueless what, under judicious selection, would probably be of great service.

Four years ago, through the instrumentality of your Board, a State Analyst was created by law. The State Board was to receive all waters desired to be analyzed, transmit them to the State Analyst, get his report, and transmit it to the sender as an official document containing the result of the water analysis. Some samples of waters were so sent, but the Analyst declared that his time was so occupied in the affairs of the University of California that without assistance it would be impossible for him to undertake an analysis of the mineral waters of the State. Under these circumstances it is hardly necessary to remind your Board that the mineral springs remain unanalyzed, to the great detriment of the State, as our mineral springs

are of undoubted value, and, if their medicinal properties were properly placed before the public, would induce a large immigration of those valetudinarians who now seek European shores in search of medicinal waters that are at their very doors, which only need analysis to determine their value. We would therefore recommend that your Board take active measures, through your Legislative Committee, to place this matter before the Legislature, and ask that a sufficient sum be placed in the appropriation bill to enable the State Analyst to employ sufficient assistants to thoroughly analyze the principal mineral waters of the State and determine their quality. It is a matter of such extreme importance to the community that no difficulty should be experienced in getting the amount sought for.

YELLOW FEVER.

This disease having appeared in an epidemic form in Florida and adjacent States, and emigration coming steadily over roads likely to carry yellow fever-smitten passengers into this State, Governor Waterman, with that care for the welfare of the State so characteristic of the man, requested your Board to take such steps as deemed prudent to guard against any possibility of the conveyance of the disease into California. Accordingly at the next meeting of the Board, Dr. S. S. Herrick, of San Francisco, was appointed to visit the southern portion of the State and determine exactly where the danger lay, if any existed. He was also instructed to visit the Mexican ports in contiguity to us, and ascertain whether any yellow fever existed there, and to report at once in accordance with these instructions. Dr. Herrick immediately left San Francisco, and having made the required inspection forwarded the following report:

Dr. G. G. TYRRELL, Secretary State Board of Health:

DEAR SIR: Having finished my tour of inspection in the Mexican State of Sonora, and returned thus far to consult with Dr. Orme, I am now ready to continue my report from the date of leaving Los Angeles.

On the night of the fifth instant I stopped off at Tucson, where I met Drs. J. C. Handy, H. Spencer, and H. W. Fenner. Dr. Handy is the local surgeon of the Southern Pacific Company, and was formerly an Assistant Surgeon in the United States Army. He testifies that cases of yellow fever occurred at Tucson in 1883, 1884, and 1885, but no case originated here, all having sickened, or contracted the disease, before arrival. He believes it impossible for the fever to obtain a foothold here, so as to spread, on account of the altitude (2,390 feet), cool nights, dry air, and distance from the sea. Dr. Fenner believes there is no danger of yellow fever effecting a lodgment here, on account of the altitude and distance from the sea, but thinks an inspection station should be established on the border to prevent the introduction of yellow fever and smallpox from Mexico, which might even reach Los Angeles. He instanced an opera troupe which suffered from yellow fever severely at Hermosillo, in 1885, and came to Tucson with all their effects. No disinfection of their baggage was made, and yet no yellow fever followed. Most of the cases at Tucson were railroad employés, who contracted the fever in the Mexican State of Sonora. No permanent resident of the town has it.

Dr. Spencer mainly confirmed the above statements and views, but believes that yellow fever might become epidemic at Tucson, provided it gained a firm foothold; it would be dangerous to introduce a large number of cases. He does not consider the nights cool enough to prevent the spread. (At present the daily range of temperature at Tucson is about 58 degrees to 92 degrees.) In 1884, he states that the Southern Pacific Company established an inspection station a few miles east of Tucson, to guard against yellow fever from Sonora and the Rio Grande region. There trains halted and passengers were examined.

Dr. Handy states that smallpox has occurred frequently at Tucson, but mostly among the Mexicans and Indians. At present there is none at all.

On the train from Benson to Nogales, October seventh, I made the acquaintance of the General Superintendent of the lines from Benson to Guaymas, Mr. H. T. Richards. He stated that yellow fever reached Nogales in 1883, 1884, and 1885, from Guaymas. No cases originated at Nogales. The fever died out late in 1885, and none has existed along the lines since. Most of the freight going north by the railroad consists of ores from the mines of Arizona and Sonora. Some dry hides, not exceeding thirty carloads annually, are shipped north, destined for New York and other eastern cities. The conductor of the

train stated that Messrs. Rosenberg & Metzler have warehouses for hides at Nogales and Benson. From another source I learned that most of the hides from Sonora are shipped at Guaymas to go by sea to San Francisco. Drs. Gregory and Goodwin, of Nogales, agree in the statement that no cases of yellow fever have originated there, though a good many occurred in 1883, 1884, and 1885. The altitude of Nogales is three thousand eight hundred and sixty-nine feet above the sea. Its daily range of temperature at present is from 50 degrees to 55 degrees, to above 90 degrees. Snow and ice occur every winter. Last winter it was unusually cold, and the lowest temperature was 14 degrees.

At Hermosillo, capital of the State of Sonora, I had interviews on October ninth and tenth with Messrs. Belisario Valencia, Private Secretary to the Governor; Mr. Calderon, a merchant, and in 1883 member of the Sanitary Board; and Doctors Monteverde and Aguilar. Their concurrent testimony is that yellow fever reached here in 1883 for the first time, coming from Guaymas. There was some disposition on the part of the Health Board, said Mr. Calderon, to quarantine against Guaymas, but the influence of the latter city caused the idea to be abandoned. The fever reappeared in 1884 and 1885, but was successively less prevalent and less severe, and there has been none since 1885. Very few of the population who remained escaped an attack. Even the Yaqui Indians showed about the same susceptibility, but had it with less severity than white people. Mr. Calderon states that the Chinese escaped entirely at Hermosillo.

In 1887, a very mild but sweeping febrile complaint called "sardina," prevailed at Hermosillo. The fever lasted two or three days, was attended with severe pains in the head, back, and limbs, frequently with a cutaneous eruption, and sometimes a relapse. I have no doubt that it was the same disease known in the Atlantic and Gulf States of the South as "dengue" or "break-bone fever."

There has been no smallpox at Hermosillo for two years, but diphtheria exists to some extent. Asiatic cholera prevailed along the west coast of Mexico and reached Hermosillo in 1850, lasting until 1851.

Dr. Monteverde believes that some cases of yellow fever in 1883 originated at Pesqueira, a railroad station twenty-four miles north of Hermosillo, but that this was the extreme northern point of possession by the disease. It declined in severity and prevalence each successive year, until its final disappearance in 1885. Dr. Monteverde was supplied by Dr. Carmona, of the City of Mexico, with his virus of the supposed microbes of yellow fever, and used the same hypodermically in the late visitation; but he found no advantage either in the prevention or mitigation of the disease.

Hermosillo has a population of about eight thousand, is ninety miles north of Guaymas, and six hundred and eighty feet above the sea. In winter there is usually some light frost. Last winter it was cold enough to injure the new growth of young orange trees and cause a fall of the leaves. The water is derived from wells, about eighty feet from the surface, and has a saline taste. Most of the rain in Sonora falls in July, August, and September, but this year none has fallen since August, and a severe drought is apprehended.

At Guaymas most of my information was obtained from Dr. P. Figueroa, who is at the same time Mayor, Health Officer of the Port, Physician to the City Hospital, and Surgeon to the Railroad Company, besides being a private practitioner, consulted far and wide.

All vessels from other ports are visited, and if from infected ports, or coming with contagious disease aboard, are subjected to detention of ten days for observation. There is no quarantine establishment prepared to disinfect vessels and their cargoes; no facilities for transshipment of cargoes. Passengers might be landed and kept under observation in tents ashore, about six miles from the city.

There is no direct communication between Guaymas and the Isthmus. Pacific Mail steamships come to Mazatlan. The steamships "Newbern" and "Alejandro" connect Guaymas with the Mexican ports on the Pacific, and with La Paz on the Gulf of California. Freights to Guaymas from Mexican ports further south consist chiefly of coffee in sacks, manufactured cottons, soap, and sugar.

In August, 1883, the Pacific Mail steamship "San Juan" brought goods from Panama to Acapulco, Manzanillo, San Blas, and Mazatlan, and passengers from San Blas to Mazatlan. Yellow fever soon broke out at Mazatlan, and almost immediately at Guaymas, and soon extended from the former to San Blas, Manzanillo, and Acapulco. The infection is supposed to have been brought to Guaymas and La Paz by the steamship "Newbern," which landed passengers and goods from Mazatlan—some of these passengers having come on the "San Juan" from San Blas to Mazatlan, on which vessel they probably contracted the fever. This was its first appearance, I am informed, on the west coast of Mexico since 1836, when it existed at Acapulco.

Being a strange disease, its nature was not at first recognized nor its proper mode of treatment understood. Its spread was rapid, and most of the population of Guaymas had it in 1883, with no exemption of age or race. Even the Chinese at Guaymas had the fever, but none died. Natives suffered far less than strangers from Europe and the United States, and less than natives of Sonora outside the city. The estimated ratio of mortality, taking all classes for the three years, was 5 per cent, which is unusually low. During the season of 1885 it seemed to die out, partly for want of subjects and partly from diminished activity of the infection.

Since 1880 a fever, variously called "sardina," "tonto," and "alfombrilla," has several times prevailed at Guaymas. It is supposed to have been introduced from Mexican ports further south. The description answers clearly to the well known "break-bone fever" of the southwest.

For two years the Central Mexican Government has been giving the local authorities

information of infectious diseases occurring either in foreign countries or in any port of the republic. By means of the international code of signals, a vessel from an infected port is made out from the lighthouse at Cape Haro, nine miles from the city, and can be ordered not to come inside the harbor. There is telegraphic communication along the coast from Guaymas to Mazatlan, San Blas, and other Mexican cities southward, so that they could be warned of the existence of danger at any other point; and Dr. Figueroa has promised to give the State Board of Health of California timely warning of danger on the Mexican coast, whether in the shape of yellow fever, cholera, or smallpox. On the other hand I have promised that he shall receive the monthly reports from your office and from the Health Office of San Francisco, as well as warning of any imminent danger from infectious disease. Here it is important to remark that during the whole course of smallpox at San Francisco in 1887 and 1888, even when proclaimed as epidemic by the Health Department of the city, the steamships "Newbern," "City of Topeka," and "Montserrat" brought clean bills of health from San Francisco to Guaymas, as I was informed by Dr. Figueroa.

In 1885 and 1886 smallpox existed at Guaymas, but there has been none since.

Dr. Figueroa has used the inoculation of the supposed virus of yellow fever for its prevention, according to Carmona's method. The urine of a yellow fever subject is concentrated by evaporation, without heat, and when needed for use is diluted with distilled water, without being precise as to strength. The dose is 15 minims, by a hypodermic syringe. Sometimes the result was an abscess, with no other effect. Ordinarily there followed fever for two or three days, with moderate headache and backache. The experiment was tried on about one thousand soldiers, who were soon ordered to march to the Yaqui district, and it was impossible to trace up the results. Dr. Figueroa believes that a portion thereby obtained immunity, but those attacked enjoyed no advantage in mildness of the attack. As to prevention, this must be quite conjectural, for they might have escaped without the inoculation.

The population of Guaymas is about five thousand, and is believed to have diminished since the appearance of yellow fever in 1883. The water supply is derived from wells forty to fifty feet in depth, just outside of the city, which is brought in small tanks on wheels, and in leather bags on the backs of donkeys. It is saline to the taste. The railroad company have a limited supply from wells at a greater distance, pumped into a reservoir and piped to their buildings. There are no sewers. Privy vaults are emptied at night by open vessels, in primitive fashion. There is no systematic inspection of premises. Complaints of nuisances may be made to the police authorities.

In ordinary winters there is no frost, but last winter there was a little ice. At the present time the daily range of temperature is from about 80 degrees to 94 degrees.

Respectfully your obedient servant,

S. S. HERRICK, M.D.,
Special Inspector.

As the report of Dr. Herrick indicates that there is no danger this year from any inroad of yellow fever from Mexican towns adjoining our boundary, the President did not think it necessary that a visitation should be made farther down the coast. Dr. Herrick is, however, of the opinion that hereafter it will be necessary for us to ascertain the condition of those Mexican ports that are in close communication with us by sea, as yellow fever is endemic among them, and even when developed it is almost impossible to ascertain the truth from the shippers, or even the inhabitants.

During Dr. Herrick's visitation south it was ascertained that the shipment of nursery goods, such as plants, trees, etc., did not take place from Florida until February and March, when they had been exposed to the frosts that are supposed to destroy the fever germ; hence no danger is to be apprehended from this source. The approach of winter will remove all danger from passenger travel, and all trains up to that time will be closely watched to prevent any fever-stricken passengers from entering the State.

CONTAGIOUS DISEASES AMONG ANIMALS.

The attention of the Board is called to the prevalence of contagious diseases among cattle, which exist in some parts of the State. Splenic fever, anthrax, and actinomycosis are among those affecting the cattle, and glanders the horses, and as such diseases are particularly dangerous to human life, the desirability of making some provision for the investigation of such cases is apparent. This can best be done by the appointment of a State Veterinarian, who shall have authority to investigate into the pres-

ence of such diseases, and take the requisite steps for the restriction and control of such animals as may be found affected by contagious maladies. A law to this effect should be immediately passed, containing among its provisions one for the partial compensation of those whose horses or cattle it may be necessary to destroy, as their destruction otherwise would involve the State in endless litigation. The law should also provide that the appointment of this veterinarian should devolve upon the State Board of Health, which would remove it from the arena of politics, and insure the appointment of a man for his superior qualifications, and not for his political affiliation. He should be compensated while in the actual service of the Board, and be required to visit at any time any county suspected of containing diseased animals, and report immediately to the Board.

As confirmatory of these remarks, we will here append a letter from Dr. Herrick, as supplementary to his report on yellow fever. Dr. Herrick had been instructed by this Board to make diligent inquiry into the question of cattle disease in California, with a view to our Board urging the necessity of some legislative action in the premises if a sufficient cause therefor existed. By this report your Board will see that disease among cattle does exist in California, and that the sooner a State law is enacted for the proper inspection of the food-supply of our people, the quicker will be the removal of many diseases, the source of which has hitherto remained unsuspected:

Dr. G. G. TYRRELL, Secretary State Board of Health:

DEAR SIR: Continuing now from the end of my previous report, I would say that Dr. Joseph Kurtz, of Los Angeles, on the eighteenth instant informed me that he treated two fatal (walking) cases of yellow fever at the Sisters' Hospital in August, 1885. They had been in the State of Sonora, Mexico, on business, and sickened before arrival at Los Angeles.

Dr. Orme is of the opinion that in case an inspection station is to be established on the Southern Pacific Railroad in the direction of Yuma, the proper place would be Cabozon, one hundred and fifty-six miles northwest of Yuma, and about one thousand seven hundred feet above sea level.

October twentieth a butcher of Los Angeles stated to me that cattle affected with bloody murrain and Texas fever had come into the city within a few weeks, but there were none at present. It is to be noted that he wished employment in looking up diseased cattle. This is the only hint of such a thing about Los Angeles. This city has no public abattoir and no meat inspector.

In an interview with Dr. R. W. Hill, of San Pedro, October twentieth, he stated that he had made to Dr. Orme an offer to inspect, without charge, all vessels arriving at this port, if authorized to keep boarding-house runners from first visiting them; and he would report to the State Board of Health all contagious disease found aboard. He could undertake the care of cases of smallpox, if desired. The danger is from small sailing vessels—coasters. There were sixteen deep water ships at this port the previous week, and eighteen the week before. Dr. Hill had heard of no diseased cattle in that vicinity. There is no smallpox at present, but there were some cases six months ago.

Going ashore at Santa Barbara on the evening of October twentieth, I communicated with Mr. W. R. Broome, a large dealer in cattle. He stated that there was, some time ago, a small amount of disease among the cattle of Ventura County. At present he hears of none there nor at any place south of San Luis Obispo, but hears of some in this last county. Mr. Broome always quarantines newly purchased cattle before mixing them with his other stock. He would be glad to receive circulars of instruction from the State Board of Health relative to the treatment of diseased cattle.

Mr. I. K. Fisher, a cattle dealer of Santa Barbara, states that no disease has existed among the cattle of this county for several years. About twelve years ago the Texas fever was introduced by cattle driven from that State through Sonora and Arizona, and has existed here and there most of the time since. It is rapidly fatal, and is the disease most dreaded by stock men. "Blackleg" was introduced about three years ago, from some quarter unknown to him. It affects the limbs from the foot upward with enormous swelling. It has been treated by the hypodermic injection of some nostrum. "Pink-eye" has also prevailed to a limited extent since two or three years ago. He is ignorant of its origin.

At San Luis Obispo, October twenty-first, I met Mr. C. J. Bromley, who has a cattle ranch seventy-five miles to the eastward. He has observed four or five cases of "big-jaw" (*actinomyces*) among his herd of about one thousand cattle. It has existed two years, but he has lost no cases. Has not separated them from the others. Intends to kill them.

Mr. E. Baker, a cattle dealer living at San Luis Obispo, knows of no disease among cattle in this vicinity at present, and has heard of none for a year, though he spends a

great part of his time among the ranches. He has not heard of any such trouble in Monterey County.

At San Francisco, October twenty-second, in company with Dr. Thos. Bowhill, V.S., now in the service of the City Board of Health, I visited several dairies on Mission Street, and afterwards the slaughter houses at Butchertown. No diseased cattle were found. It is generally admitted that the condition of beef cattle has improved since Dr. Bowhill went on duty, ten days ago.

Some butchers deny that any diseased cattle have been slaughtered and sold here for food; others admit the fact, particularly as regards "big-jaw." All maintain that no diseased cattle are brought here at present.

October twenty-third I accompanied Dr. Bowhill in a visit to several dairies beyond the thickly populated part of the city. Among the cows of four dairies we found four cases of "actinomycosis" well marked, three less marked, and one case of advanced tuberculosis.

October twenty-fourth I visited a number of pork shops in Chinatown, in company with Dr. Bowhill. We found many lungs and livers tuberculous, and one case of hydatids of the liver. All these organs were condemned and destroyed, but it is obviously impracticable to discover all that come to Chinatown, or that are elsewhere offered for sale.

Large numbers of hogs belonging to butchers and to Chinamen are fattened on the offal of slaughtered animals at Butchertown. They are kept in close, dark, and filthy pens underneath the slaughter houses, and fed on offal for six to twelve months before they are killed. Most of them become sick, when first put under these conditions, and a good many die. It is not strange that the viscera of such hogs become diseased, and it is clear that pork fattened in this way is not a desirable article for human consumption, whether the viscera be healthy or not.

My visit to Petaluma was occasioned by reports of diseased cattle there, and of the shipment of tuberculous cows from the city to that place, for concealment. On arriving there, October twenty-sixth, I called on Mr. William A. Lewis, who lost five cows out of about forty in the early part of September. They were fed on green corn and the stalks, which had previously been chewed dry by hogs. All that sickened died in about eight hours. After withdrawing the corn no more sickened. Then the hogs were separated from the cows; corn was again given, and no more cows sickened. There was no disease among the hogs.

Dr. Thomas Maclay, V.S., who has resided three years at Petaluma, confirmed the account of Mr. Lewis. Post-mortem examination of the cows showed impaction of the dry cornstalks in the third stomach and inflammation of the cerebral meninges. His explanation is, that the impaction and irritation of the stomach by the sharp points of the cornstalks caused reflex action upon the cerebral meninges and death with head symptoms. About three months ago he saw at a dairy a solitary case of actinomycosis, which was destroyed, by his advice, and the carcass was buried. He heard of two or three other cases at a certain dairy about two months ago, but did not see them. He has heard of no other cases of contagious disease among cattle. Liver-fluke has prevailed among sheep feeding on wet grounds in this valley, and considerable numbers have died. Their carcasses have been left to the buzzards.

Dr. Maclay is a regularly educated and well qualified veterinary surgeon; is very obliging, and greatly aided my investigations.

Dr. J. H. Crane, President of the Board of Health of Petaluma, states that several individuals here have been in the habit of buying up bulls and old broken-down cows of dairymen. Some have been shipped alive to San Francisco, and others after slaughtering; but none have been purchased lately. This practice is probably the foundation of the report that diseased cattle were supplied to the butchers of San Francisco from Petaluma.

A gentleman who owns a dairy ranch in the vicinity stated that it is customary for dairymen to send their old cows, just before or just after calving, to the city, to be disposed of. They fall into the hands of city dairymen, are milked for one season, and then are sent to the butcher.

The man who attends to the shipment and receiving of freight, at Petaluma, for the steamer "Gould," informed me that no diseased or broken-down cattle have been shipped to the city for the last three months, though this has been practiced. No such cattle have been received by boat from San Francisco.

It can only be conjectured how many of these old cows are tuberculous. It is certain that their conditions for health are more favorable in the country than after their arrival at the city.

At San José, October twenty-ninth, H. A. Spencer, V.S., stated to me that anthrax appeared in a certain dairy two miles from that city, in 1885. Fifteen cows were lost, and the remainder were removed. Some hogs also died, after feeding on their carcasses. The origin of the outbreak was unknown. It was confined to an inclosure of about one hundred and fifty acres. No disinfection of grounds or shed was made, but the place has not been used as a dairy since. Dr. Spencer attended a horse which died of anthrax about September first, near the New Almaden mines, about ten miles from the Tennant ranch. He conjectures that the contagion might have been conveyed from the latter place in bones carried off by coyotes. He has met a few cases of actinomycosis during the last ten years, and one animal thus affected was destroyed a few days ago. In his opinion the recent action of the State Board of Health had produced a marked impression on owners of stock. Dr. Spencer has been the Official Veterinarian of Santa Clara County since

May last, and up to the present time has caused twenty cases of glanders and farcy to be destroyed.

October thirtieth I met a gentleman at San José from Tennant's Station, who reported the sudden death of another of his horses, being the fifth since September twenty-sixth.

A son of Mr. James P. Sargent, of Sargent's Station, informed me October thirtieth that his father lost about thirty-five cattle out of three hundred during the month of September, while pastured on a certain field at Tennant's Station. The cattle were then driven home, where five more died. That particular field of seven hundred acres at Tennant's he stated to have had a history of fatality to cattle for fifteen years. The disease prevailing is undoubtedly anthrax.

Mr. Samuel Rea, living near Gilroy, stated that he has lost thirty-five out of one hundred milch cows during the present season, from a disease which he has not known among them before. They died within a day or two of the onset, or recovered under a purgative treatment. His nephew stated that a disease known as "bloody murrain" had prevailed among the cattle belonging to his father and himself for the last twenty years, when pastured on a certain marshy field of two hundred and fifty acres, two and a half miles from Gilroy. Cases have also occurred in two other fields, wet in winter only, for many years, but not constantly. Their cattle never die this way when kept on the mountains. At least one hundred and fifty of their cattle have been lost in three years, and very few of those attacked recover. One of his neighbors has also lost a few cattle in a similar way.

At Monterey, October thirty-first, the foreman of Hon. B. V. Sargent informed me that a disease called "blackleg" has in former years destroyed a few of the best calves on the ranch, about five miles out, but none have died this year.

Mr. David Jacks stated that he has annually lost a few calves and yearlings of the same disease, which he attributes to plethora, as it attacks animals in the best condition, and may be prevented or relieved by bleeding and purging.

At Salinas, November first, several individuals testified to the annual prevalence, for a number of years, of a disease called "blackleg," on a field of six hundred acres three miles out, traversed by the Salinas River, which is cultivated in barley. It is therefore pastured only about three months after the removal of the crop. The owner stated that a few cattle had died on it this year—twenty-two out of six hundred. The survivors were removed early in October, and no more had died. He also stated that there are now about eighty horses on this land, none of which have died; though in 1885 seventeen out of thirty horses recently brought from the mountains had died there.

Dr. Tuttle, of Salinas, has made a number of post-mortem examinations of cattle dying on this tract, and in every instance he found the spleen enormously enlarged and softened. One of his fingers bears the scar of malignant pustule contracted in this work, and he relates a much more serious case treated by him.

I remained at Gonzales three days, investigating the malady which has prevailed there for years, in conversation with many individuals. It appears that a disease called "blackleg," or "bloody murrain," has annually occurred on a tract of eleven thousand acres since 1876. The land has been cultivated in wheat and barley since 1874 or 1875, and one individual stated that the disease appeared before grain grew there. It first made its appearance along the river, which forms the western boundary, has gradually extended eastward across the valley, and within the last two years has invaded the foothills. The general opinion is that the disease is confined to this tract, though there is some testimony to the effect that the tracts on the north and that across the river have been reached. Its prevalence is confined to the periods of pasture upon the stubble, August, September, and October, and at the time of my visit it had about ceased. Sheep had suffered so severely that none had been pastured there for two years, and this year more cattle and horses had died than ever before. Hogs and dogs feeding on their carcasses had also died. One herd of cattle, numbering one thousand eight hundred, had lost over one hundred. Another of nine hundred, had lost nearly eighty in a month. The survivors were then removed to another stubble field three or four miles further south and stopped dying.

I conversed with two men of Spanish descent, who are in the habit of skinning these dead animals and of helping themselves to as much of the flesh as they choose. They and their families eat it both fresh and after drying, and large quantities of this meat are jerked. In all probability a portion is sold for consumption by people ignorant of its origin. These persons claim to suffer no harm in their own persons or families from such practices. A physician has reported the death of fourteen children in 1884 as attributable to eating such meat, but it is assigned by others to diphtheria. Previous to this year the carcasses were left on the ground, but lately the remains have been burned after skinning.

It was my intention to make one or more post-mortem examinations of dead cattle at Gonzales, but none died after the first day of my three days' stay. The stubble was then nearly exhausted, the cattle were about to be taken off, and the disease was substantially over for the season.

Mr. Mercer and Dr. Bowhill brought away morbid specimens from a previous visit, and submitted them to the examination of expert microscopists in San Francisco, who clearly made out the destructive bacilli of anthrax.

At Salinas I met the partner of Mr. Breen, who lost nearly six hundred cattle out of a herd of thirteen hundred, on a certain ranch near Soledad, during the last ten days of September. It was a rented pasture, and is said not to have had diseased cattle on before this year. Mr. Breen hastily removed them to another tract not far off, and no more sickened. The few that were sick at time of removal died. The disease is said to have

been Texas fever. If so, I know not how it was introduced. It was my intention to clear up this point, but the investigation is here arrested.

The public mind has been greatly exercised of late by reports of diseased cattle, and the demand for beef has considerably diminished. This has been felt by owners of beef cattle, and I found them disposed to speak of "blackleg" as by no means a formidable disease nor more prevalent this year than formerly. Dairymen freely acknowledge their losses, and those not interested in stock raising speak without reserve on the subject. I am satisfied that anthrax is more widely distributed in California than is generally supposed by the public, and that the owners of beef cattle are reticent on the subject. The first step toward applying an effectual remedy is to obtain the facts. Then some legislation may be needed to strengthen the authorities, so that the contagion may be eradicated. It is necessary that the poisoned fields should be thoroughly burnt over, and where the disease has long prevailed, this should be repeated the next year and perhaps the following one. Where the land is cultivated in grain, the stubble can easily be burned as soon as the crop is removed. Where grass alone grows there will be some difficulty, but the richest lands, producing most pasturage, are those most poisoned. At the present writing, November seventh, the excitement has mostly died out, but the subject should not be allowed to rest. The Legislature should make it the business of one or more competent men to learn what fields and buildings are infested with the anthrax poison, and make it the duty of some authorities, State or local, to attend to its eradication. The longer the matter is delayed, the more the difficulty will grow, and at the same time the more urgent will become the necessity for efficient action.

Respectfully submitted.

S. S. HERRICK, M.D.

OUR CORRESPONDENTS.

The increasing number of those to whom we are indebted for means to enable us to furnish this report is so great that it is only through this report that we have the opportunity of thanking them individually and collectively for the very valuable information supplied from time to time to this office. We have particularly to thank those physicians who have so generously furnished us with circumstantial accounts of outbreak of disease in their practice, or under their immediate supervision, and with accounts of investigations that have been made with reference to the causation of sickness, and their modes of prevention. We desire to say that all such communications are received with great pleasure, and are utilized in giving expression to the sanitary lessons which such descriptions teach. We trust in the coming years to still further increase the area of our correspondence until the State Board of Health will be in intimate relation with every town and village in the State, through its local health authorities, or its medical friends. Suggestions from any such, whereby the efficiency of the Board can be increased, or its work extended, will always be welcome, and to those who have given us such efficient aid in the past, and hope will continue with us in the future, we again tender our heartfelt and sincere thanks.

To those gentlemen who have contributed so liberally to the literary portion of our work the Board also desires to express its thanks. Some very valuable papers will be found in our appendix, from writers of national reputation, which will be perused with much pleasure and a great deal of profit.

Our thanks are also due to the Signal Service Corps for meteorological observations, and to Sergeant Barwick, of this city, for a contribution on the climate of Santa Barbara as compared with Mentone and San Remo. The aid which the Signal Service is rendering in determining some problems in the causation and cure of disease is becoming more apparent every year.

THE PRESS.

We are happy to say that the cordial relations which existed between the press and our Board, when its last biennial report was printed, still continues. To its aid we owe much of the success which now attends the Board in its advisory capacity. Although perhaps some apparently just

criticisms have been made upon the reports promulgated through our "Monthly Circular," these were made by those who failed to understand the difficulties under which the Board labors to get any reports concerning the death rate, or the amount of prevailing sickness. The chief fault found with us is in estimating population, and the relative mortality. To these critics we would reply that the population is estimated by the Health Officer or private correspondent, and this Board has no right, having no more correct knowledge, to question the truth of such estimate; neither has your Secretary any right to question the correctness of the deaths reported. When the whole press will aid us in passing such laws as will insure the registration of every death and birth, and in the power of its might compel our legislators to give ear to the requirements of our Board to make it of practical benefit to the public and the State, then if any dereliction of duty occurs, we invite the censure of the press whenever the fault occurs in us, and not in the law under which we act.

As a Board we desire to express gratefully our thanks for the valuable aid the press has always given. The public may thank it in helping us to get an appropriation set apart by the Legislature whereby we were enabled to guard our State against the inroads of disease. Through its instrumentality we were successful in securing quarantine stations in San Diego and San Francisco, and to the press we owe the general diffusion of sanitary knowledge throughout the State that, unaided, this Board could not hope to have known under its present restricted power.

We are now entering upon that era of the world's history when men are becoming convinced everywhere that health and longevity must be governed by laws which are inexorable, and that those who would enjoy perfect health must render implicit obedience to these laws. In the dissemination of this knowledge our Board is engaged, and, sustained by the press, there can be no retrogression. Preventive medicine will be taught the coming generation, until no man will be considered as skilled in the medical profession who cannot alone cure, but also prevent disease.

CONCLUSION.

In concluding this report, as executive officer of the Board I desire to acknowledge, with thanks, my personal obligations to my co-laborers on the Board, for the assistance they have rendered me in the discharge of my duty, and for the counsel cheerfully given in every emergency. Our actions have been harmonious in seeking the welfare of the State, and we think our past acts will merit public approval. We will, in a brief summary, recount our hopes for the future:

First—We look to our Legislature to continue the Contingent Fund set apart for the use of the Board in restricting or preventing the importation or development of infectious or contagious diseases in California.

Second—We trust to have our health laws so amended that we can have a correct return of the births, deaths, and marriages occurring every month.

Third—We hope to have a law passed making it compulsory to have vaccination successfully performed before admission of any pupil into the public schools.

Fourth—We hope to obtain a law forbidding the interment or cremation of any human body within the State without a proper permit. This we ask to prevent and to detect crime, to insure correct statistics of death, and to have a reliable record for reference, whereby those whose identity

is sought to be established, by anxious friends or for legal purposes, can be obtained.

Fifth—We hope to make compulsory the organization of local Boards of Health in every county and city in California, that in time of great sickness, or in the advent of an epidemic, unification of purpose may be obtained and concert of action had with promptitude and without conflict of interests.

Sixth—We hope to enact a law creating the office of State Veterinarian, whose duty it shall be to take cognizance of all infectious or contagious diseases among domestic animals, condemn them to death when necessary, and prevent the distribution of diseased meat among the people. We are aware that this source of disease is more common than is supposed, and should be made the subject of judicial inquiry. We also will recommend that the Legislature make provision for a small payment in recompense for the animals slaughtered.

Seventh—We will ask the Legislature to vote a small appropriation to enable this Board to have the mineral springs of the State officially analyzed.

These are the chief requirements of our Board, and we would ask our legislators to reflect upon these subjects, and be prepared to vote intelligently upon the propositions. They are all in the interest of the public health, and for the lasting benefit of California.

We append to this report the reports of the committees appointed to visit those institutions drawing aid for their maintenance from the State; also the report of the State Analyst, together with whatever reports we have received from County Hospitals, which are, we regret to say, meager in the extreme. Appended to this report are the expenses of the Board and expenditures for quarantine purposes, vouchers for which are on file in the Controller's office. We also append the names and addresses of our various correspondents, to whom we are indebted for the mortuary statistics that immediately follow; and although, through the inefficacy of the law, they are neither full nor complete, yet they give the public an adequate idea of the general freedom from disease which characterizes California, and impresses the visitor from abroad with a sense of how favorable the climate must be that produces such a limited mortality from climatic diseases.

All of which is respectfully submitted.

GERRARD G. TYRRELL, M.D.,
Permanent Secretary California State Board of Health.

REPORT OF THE STATE ANALYST.

Pure air, pure water, and pure food are essential to the maintaining of health. Whoever introduces impurities into either of these substances may thereby introduce disease and death. The position of the individual citizen in this regard is one of utter dependence and helplessness. The air may be infected with disease germs, but he cannot perceive them—they are not recognizable by either sight, or touch, or smell. The ordinary person cannot discover them by any sense; polluted water may have the appearance of pure water, it may be clear, and cool, and palatable, and refreshing to the taste, and still contain the seeds of disease; food articles may have all the appearances of purity, the dealer himself may believe them pure, and yet they may be adulterated, and even dangerously adulterated. It is clear then that in these matters the State must protect its citizens, because of their inability to protect themselves. This right and duty is conceded in every civilized country. We maintain a rigorous quarantine against infectious diseases, we condemn, property, we compel the removal of business, we require every person in the community to avoid the maintenance of a nuisance. The State cares for the water supply and protects it against pollution. In this connection, it should be remarked that everywhere throughout the whole civilized world, greater and greater care is being exercised in this matter, and stricter laws enacted. Two years ago the Legislature of Massachusetts appropriated \$30,000 to the State Board of Health, for the purpose of a thorough examination of and report upon the water supply of the State.

The food question stands very much upon the same basis. The consumer cannot detect adulterations in the food he eats: he cannot with any certainty detect adulteration in the crude materials as he buys them in market. The dealer himself, with all his knowledge of the business, is very often deceived; both consumer and dealer are alike helpless: they alike turn to the State and ask, yea, demand protection from the frauds and dangers which threaten them at the hands of unscrupulous manufacturers and dealers. No argument is needed to prove that the citizen has a right to this protection or that the State is bound to furnish it. This is conceded in all countries and by all nations.

Very active and vigorous and effective measures have been taken by nearly all civilized countries for the complete suppression of trade in adulterated foods, drugs, and beverages. Public attention has been specially called to this subject during the last ten or fifteen years, and it has been during this short period that the most effective efforts have been put forth to stop the manufacture and trade in adulterated food and drugs. If less attention has been called to the subject on this coast, the reason has been that we are pressed with many other problems incident to a new and isolated State. The movement in the East has been slow when compared with the States of Europe. We are so accustomed to let things take care of themselves and so careful not to interfere with the business of the country, that we have almost hesitated to follow the examples of our neighbors on the other side of the Atlantic. We must appreciate the neces-

sity for legislative action before any can be taken. Massachusetts was among the first of the Eastern States to take action on this subject, and after a personal study of their laws and methods, in my opinion, they are the most efficient. I believe that we would do well to be guided by their experience and to follow their example. Food adulteration is a great and growing evil, yes, it is a fraud and a crime committed upon innocent and helpless victims. As a State and community we shall fail in our duty to ourselves and to our neighbors if we do not take an active interest in this matter, and see to it that adulterators of food do not go unpunished.

The adulteration of food is not altogether a new thing. It has undoubtedly been carried on to some extent before our time, but not on so large and grand a scale. An unscrupulous dealer may now and then have attempted to deceive his customers, and increase his own gains, but such dealers were rare, and their attempts at adulteration were clumsily done. We have all heard the story of wooden nutmegs in Connecticut, and that now and then sand had been added to sugar, but no one ever believed that the practice was common, if, indeed, there may have been some truth to start the story. It was left for our time to raise the adulteration of food to a fine art. No one country and no one locality seems to have attained, certainly not to have maintained, a monopoly of this art for any length of time. I know of no contagion that spreads so rapidly and surely. Apparently it reaches all countries and all peoples—at least, those claiming to be civilized.

Adulterations affect the public in a twofold manner; they affect the commercial interests of the country; but this, and of far greater importance, they affect the health of the country. There may be adulterations which do not seriously affect health, but they are nevertheless frauds, and their influence, though felt chiefly in the commercial relations of our people, is baneful. We should not forget that every fraud has a moral effect upon a community, and when countenanced in any way, its influence is widespread and disastrous. It is for this reason, if for no other, that we cannot be indifferent to any adulteration, whether prejudicial to health or not. As a general rule we can leave the solution of purely commercial problems to those most directly interested. Large interests, when interfered with, can usually protect themselves. Combination and association have become so general in our day that the weak individuals are easily transformed into an invincible organization.

The New York Dairyman's Association was able to procure legislation based wholly upon the fact that the manufacture and sale of oleomargarine was prejudicial to their interests. They were right when they denounced its sale under the name of butter. It was not pure butter, and had no right to be called butter, or sold as such.

The adulterations of olive oil and of lard come under this same class. No one claims that they necessarily are injurious to health, but they are being sold for what they are not. It is a safe rule to establish, that every article which does not show what it is, upon simple inspection, shall be labeled correctly and intelligently. If the lard refiners can make an article which is as good, or better, than the pure lard, they are entitled to all the benefit which they can derive from their study, experiment, and skill in manufacture. There may be a legitimate field for investigation and enterprise in this direction.

When Liebig, in 1865, recommended a food for infants, he conferred an incalculable blessing upon coming generations. His profound knowledge of chemistry, and of plant chemistry, and of animal chemistry, enabled

him to recognize a substance which could replace mother's milk. There is a vast field for the application of chemistry to the *improvement* of food, but it ought not to be directed to its *adulteration*.

There is a debatable ground which perhaps should be mentioned. It is one of the triumphs of modern chemistry that a very large number of substances occurring in plants or animals, or extracted or derived from them, have been prepared artificially in the laboratory. Now in very many cases this artificial product is *absolutely identical* with what we may call the *natural product*. I can illustrate by taking certain coloring substances. Alizarine has from time almost immemorial been extracted from the madder. Graebe and Liebermann, two German chemists, prepared it artificially from the coal tar products. The artificial and the natural drugs are absolutely identical, and it is now a matter of but little consequence whether the method of preparation be given or not. Indigo is prepared artificially and is identical with the natural product. Salicylic acid is prepared artificially and I think it is now conceded that it may replace the natural. Perhaps extra care may be needed to insure equal purity. I think it would be no fraud to use the artificial in place of the natural acid. This is an extreme case, yet a clear rule it seems to me can be laid down. The *proof* must be furnished and accepted by the highest authority, and I would add by *official authority*, that the artificial and natural products are the same.

In pharmacy we have the Pharmacopœia, which is the official authority, or rather is accepted as such. In the great majority of cases, however, there will not be found any such debatable ground. In the case of food, which is almost always a mixture of many chemical substances appropriated and organized into a structure under the influence of plant and animal life, we may not expect to reproduce it artificially. The spirit which allows or prompts adulteration, even if that adulteration is not necessarily harmful, is *hostile* to the best interest of society, and easily degenerates so as to countenance injurious practices.

I shall next call attention to the *nature* and *extent* of adulteration as practiced outside of our State. The evidence will be taken from official reports and official examinations made in the East and in Europe.

By a general consent milk is placed first on our list, and more attention has been paid to this than to any other single item of food. It is the diet of young children and of invalids, as well as of older and stronger persons. If it does not contain the ordinary nourishing constituents in the proper proportion, it is not what the buyer has a right to expect; if, on the other hand, it contains foreign and injurious substances, it is a fraud, and may prove very injurious to those who use it.

The one adulterant of all times and countries and people is water. It is the old, old story, that the milkman will add water to his milk. It is a practice which is begun very gradually, as the testimony in many cases will show. The milkman in pouring from one vessel to another rinses out his can or pail and pours the rinsings into the milk. This only has to be done frequently and liberally to dilute the milk very considerably.

In examining the record, it would seem as though the practice was very cosmopolitan and very democratic. No country and no class can lay exclusive claim to it. The milk is watered in small quantities and it is watered in large quantities, it is watered a little and it is watered a good deal. The only wonder is that the community will allow itself to be so imposed upon. Of the adulterants other than water I will not take time to speak. When water is added in such quantities that taste and general appearance are affected, then other things are added to prevent the ready

detection of the watering. Not unfrequently, according to these reports, the milk is skimmed or partially skimmed. The addition of preservatives is not as common as it was a few years ago. For this purpose boracic acid and salicylic acid were used. I shall speak of these in connection with wine, and will now pass them over.

Many and varied are the adulterations that the chemist has to look for, yet few and simple are those usually found in the milk.

The constitution of pure milk has been so thoroughly and carefully investigated that we are enabled to agree upon a standard, and milk which does not come up to this standard is condemned. It may fall below this standard, because it has been adulterated, watered, etc., or it may have been taken from cows insufficiently fed or in a low, lean condition, and if not actually sick, lacking the vigor and strength of health.

All over the world this problem has been met, and the chemist now stands on firm ground and has the support of the communities where he works. I suppose that in no other field has good supervision and inspection accomplished *so many good results*.

In Canada this examination began in 1876, when 58.6 per cent of the milk examined was adulterated. In 1886 the percentage of adulteration was reduced to 11.2 per cent. The same or nearly the same result was given me by the President of the Massachusetts Board of Health; it is the experience of milk inspection everywhere. The very fact that there is such an examination by competent authority goes far to prevent adulteration.

I have before me the report of the Inspector of the State of New York:

	Samples.	Adulterated.
In 1880.....	1,514	11.0 per cent.
In 1881.....	1,110	4.6 per cent.
In 1882.....	1,775	6.7 per cent.

The importance of the subject demands attention, and the most careful attention. The testimony from all parts of the world is practically in accord with that from any particular locality. We simply find it a little worse in one place, and a little better in another. Government examination and inspection limits and goes far to break it up.

A supervision of the milk supply of a large city could do much good, as the testimony shows. The supervision means more than a simple chemical examination, for this, once in force, would naturally be extended to an examination of the condition of the cows themselves, whether healthy or not, and especially as to how they are fed. The exclusive use of distillery swill and refuse beets from the beet sugar factory would then be stopped, and many other evils connected with the milk trade would disappear.

I think I may next mention the adulteration of wine, beer, and liquor. I do not refer to local adulterations, for I believe that, taken as a whole, California wine is the purest wine to be had, but even among our people there are some who are tempted to do what is done on so large a scale in other countries.

The following table is taken from the report of the Municipal Laboratory of Paris, 1885, page 173:

	1881.	1882.
Number samples wine analyzed.....	3,361	5,150
Number samples good.....	357	896
Number samples passable.....	1,093	1,590
Diseased wines.....	6.51%	5.24%
Fortified wines.....	9.55%	7.32%
Wines not pasteurized.....	24.45%	25.47%
Wines pasteurized between 1 and 2 grams.....	52.53%	41.79%
Wines pasteurized more than 2 grams.....	23.02%	33.04%
Watered.....	41.12%	29.15%
Wines colored.....	15.65%	7.66%
Salicylated.....	4.73%	5.00%
Salted.....	.18%	.08%

If we had an analysis of the wines which are being used in the East, I am sure that the honest wine maker and wine dealer would be astonished. Some two or three years ago I received samples of wine which were being sold for medicinal use in some of the best drug houses of the Mississippi Valley. They embraced port, sherry, and catawha wines, specially recommended for medicinal use. A careful analysis showed them to be, beyond all doubt, *manufactured wines*, not made from the juice of the grape, or at most, only flavored with grape juice. We find frequent reports of discoveries by the Health Department of New York of these artificial wineries in the heart of the city where wines are *made*. The materials used are dried apples, dried fruits of the poorest quality, sugar, glucose, grain spirit, etc., with various flavoring substances, coloring matter, etc., to give proper taste and appearance. I believe that the worst adulterations are made in a small way by ignorant and irresponsible persons. It would be impossible to anticipate some of the concoctions which they compound.

I am disposed to speak more fully upon the subject of California wines, because I have had opportunities of knowing a good deal about them. As State Analyst, I have analyzed a large number of wines as they were being marketed. Since the pure wine law went into effect, it has been customary for the wine dealer to require an analysis of the wine to be sure that it was not adulterated before purchasing. As the result of these analyses it will appear that hardly a single wine among the hundreds analyzed was adulterated. I am sure the wines of no other country would show so good a result. There is hardly an excuse for adulterating California wine. Wines are adulterated to cheapen them: they are diluted, and then color and substances to give body and flavor are added, or preservative agents are added (antiseptics, sulphurous acid, or its compounds, salicylic acid, borax, or boracic acid, etc.), or reagents are added to improve taste, color, etc. I think that there is no necessity or excuse for treating our wines in that way. It would be worth everything to us to maintain the reputation of purity for our wines. It is practically conceded to us, and certainly the least we can do is to preserve it. The wine growers are thoroughly in sympathy with this idea, and as a body, I am sure, will heartily support it.

Beer has also been adulterated, and every report of analysts will mention its adulteration. This is most commonly done by substituting some other bitter principle for the hops. Dr. Ure, in Watt's dictionary, says, "as long ago as the reign of Queen Anne, brewers were forbidden to mix sugar, honey, Guinea pepper, *essentia binei*, *coccus indicus*, or any other unwholesome substances in beer." Prussic acid, strychnine, absinthe, and many other poisonous drugs are reported as having been found in beer at various times and places.

The adulteration of distilled liquors is almost proverbial. I will not take time to discuss it here.

I have reason to believe that one of the most adulterated articles to be found in market is the preserved or bottled cider. The attempt to keep any fruit juice like cider or grape juice unfermented, means the addition of antiseptics ninety-nine times in one hundred.

The spices and condiments present special inducements to the food adulterator because of the form in which they are put upon the market.

Instead of the oldtime peppercorn, and allspice, stick cinnamon, and mace, these are ground by large mills and put up ready for immediate use. The modern house servant is far more regardful of his or her convenience than our great-grandmothers, and consequently is more exacting in demanding that everything possible be done for him or her. Nothing is easier than for the spiceman to put in all his dust and waste, and when this gives out to make waste and dust. I am sorry to say that the state of the trade in this branch is most deplorable. The trade is managed as follows: Inasmuch as spice grinding has become a necessity, mills have been erected and maintained for this purpose. They keep spices ready ground, or grind to order. They usually put their own label upon both. The honest and conscientious grocer, who values his good name, says his only protection is to buy the pure, unground article in market and then send it to the grinder, which is returned to him, unless by special agreement, bearing the label of the grinder. Unless I have been very much misinformed, the label which is placed upon these goods conveys absolutely no indication as to their purity. There may be sold, under the same label, goods which are as different as well can be—some pure, some grossly adulterated. As proof of this may be quoted from the bulletin of the Department of Agriculture, by Dr. Richardson, on spices and condiments.

The following advertisements are widely circulated:

— — —, manufacturer of spices, spice mixtures, and mustards, 181 — Street, N. Y.

Goods made to order for wholesale grocers and druggists; also grinding done for jobbers who pack their own goods. *Spice mixtures*, cayenne pepper a specialty.

— — —, 17 — Street, New York, manufacturer of all kinds of spice mixtures. My celebrated brand of P. D. pepper is superior to any made. Samples sent on application. Goods shipped to all parts of the United States. *Spice mixtures a specialty*. Spices ground for the trade. We are the inventors of suction coolers.

I find in the "Analyst" of 1883 an item which gives us the meaning of "P. D.:" "At the weekly spice sales in Mincing Lane lately, a firm of brokers proceeded to the sale of six hundred and eight bags (thirty tons) of black pepper dust," etc. Objections had been made the day previous to the sale on the ground that it contained 44 per cent of sand and clay. This gives us some hint as to the meaning of "P. D.," which has come to be a well known term in the trade.

The report gives the following statement of the condition of the trade: "At the present time in several of our largest cities the price to be paid for a spice is named by the retail dealer, and he is then furnished from the spice mill with a mixture containing the largest amount of pure material which can be supplied for the money, the necessary weight being made up of a diluent of some cheap and harmless substance, different grades being distinguished as pure, extra, superior, No. 1, no one of which is pure and many of which are mere variations in labels, and none in quality. As example, the fact that a New York firm, it is understood, in a short time used and put upon the market in their market more than five thousand pounds of cocoanut shells, and the quotation already given in a journal devoted to spice milling, shows how universal and open the custom has become."

A comparison of the reports of those States and countries where food examination is maintained, shows that the majority of samples submitted for analysis were adulterated. Pepper is adulterated with starch, rice, yellow corn, and fresh cracker crumbs, and black pepper perhaps more so than white, although the latter might just as easily be adulterated with rice, cracker crumbs, etc.

SPICES.	ADULTERANTS.
Allspice	Spent cloves, clove stems, cracker dust, round shells or charcoal, mineral color, yellow corn.
Cayenne	Rice flour, salt, and ship stuff, yellow corn, turmeric, and mineral red.
Cassia	Ground shells, crackers, turmeric, minerals.
Cinnamon	Cassia, peas, starch, mustard hulls, turmeric, minerals, cracker dust, burnt shells, or charcoal.
Cloves	Spent cloves, clove stems, minerals, allspice, roasted shells, wheat flour, peas.
Ginger	Cereals, turmeric, mustard hulls, cayenne, peas.
Mace	Cereals or starch, buckwheat, wild mace.
Nutmeg	Cereals or starch, wild nutmeg.
Pepper	Refuse of all sorts, pepper dust, ground crackers or ship stuff, rice, mustard hulls, charcoal, cocoanut shells, cayenne, beans, bran, yellow corn.
Mustard	Cereals and starch, turmeric, peas, yellow corn, meat, ginger, gypsum.

It is notorious that ground coffee is mixed with chicory and roasted grains. We have yeast powders of all sorts and kinds, a good proportion of which contain alum. Pickles are sometimes colored with copper; candies are colored with poisonous drugs. The Health Department of New York has seized, condemned, and destroyed thousands of pounds for this reason. Alum is sometimes put in poor flour and bread. Cream of tartar is often either impure or adulterated, and so on through the list. There is all the evidence that could be wished to show that adulteration is widely carried on. The worst and most dangerous cases are probably practiced on a small scale. When an establishment accumulates capital it becomes conservative.

Last year a confectioner in Philadelphia colored his buns yellow with chromate of lead. This was done to economize his eggs. The amount used, however, was so excessive that many persons sickened, and several deaths resulted from eating these adulterated buns.

The adulteration of drugs is, if anything, far more serious than that of food. The physician is left without any guide in administering his remedies, if he is not sure of getting what he prescribes. Reports again show that there is a very considerable amount of adulterations even here. Standard preparations are not up to standard, and sometimes inferior in quality, and even substitutes are employed. Without going further into details, I have presented evidence to establish the fact that adulteration of food and drugs is common enough to call for serious and careful attention on the part of every one. Here is a great evil that we need to be protected against, an evil affecting the business, health, and morals of the State.

As Californians, we have an especial interest in the maintenance of food purity. We are already recognized as one of the great wine producing countries of the world. Our wines are beginning to find markets in good measure because they are believed to be pure. We cannot afford to allow the good name already obtained to be injured by ignorant and unscrupulous persons. The pure wine law enacted by the last Legislature was

simply the result of this sentiment among the wine growers. As a class, and as individuals, they are heartily opposed to any treatment of the wine that could in any way be considered as adulteration. The interests involved are too great to be jeopardized by introducing any doubtful practices even if they promised some temporary advantage.

The olive oil industry in this State is still in its infancy, but it gives good promise of a future here. The adulteration of olive oil in general, is a byword. It is known to everybody that cotton-seed oil is exported from the Southern States in large quantities to be mixed with the olive oil of France and Italy, to be again imported as pure olive oil. It is not claimed that cotton-seed oil is injurious, but it lacks the flavor of the pure olive oil and its admixture interferes with the development of the industry. If the mixed oil is sold for what it really is, and not for what it is not, no wrong can be done. This much of protection every one will be ready to concede towards the development of our infant industries.

Whence is to come this relief and protection? This in good part rests with ourselves. The condition of our trade is not so bad that good, pure articles of food cannot, as a rule, be had. There are intelligent and honest dealers who do the best they can to furnish the pure articles, which their customers require and are willing to pay for, but the pure articles cost more than the adulterated, and the consumer must be willing to pay the difference. The public must realize that there is an evil against which they must protect themselves. They must realize that it is a great and a threatening evil, and that each and every person is affected by it.

The citizens of the commonwealth need to be protected in the enjoyment of their rights; they need to be protected against dangers which threaten life, health, and property, and which they are powerless to resist. The food consumers have a right to demand that when they ask for bread, that they be not given a stone; and when they ask for a fish, that they shall not receive a serpent. One of the characteristics of our civilization is shown in the regard we pay to the helpless and unfortunate. Instead of allowing the weak and the crippled, those diseased in mind and body, to perish in the struggle for existence, the strong help to bear the burden of the weak, and we have seen the poor and sickly child develop under this system of nursing into a healthy maturity. The adulterated food affects most seriously the young and the invalid. We cannot judge of the effect of such food upon the robust man in vigorous exercise, for he can resist or throw off its action, but with the delicate digestion and lowered vitality of the invalid it is very different. They ask and deserve protection. We, the victims, demand protection against adulterations which, even if they are not injurious to health, are fraudulent. This is a wholesale robbery committed upon innocent and helpless victims. If the State has any function which is clearly and distinctly recognized, if it owes any duties to its subjects, surely it has both the right and should feel the obligation to protect against such frauds and impositions.

The honest tradesman and dealer asks protection against such stupendous frauds and deceit. In the fierce competition of business, the man who adulterates can undersell the honest man, and the man who undersells draws customers. The result is likely to be a demoralization of trade. The honest, conscientious man is driven out, or driven to the wall. The public is robbed; trickery, deceit thrive; public morals are degraded; there is no public confidence, no faith, no *esprit du corps*; and, as a consequence, private morals decline and the whole fabric of society is affected with a dry rot. What further legislation, if any, do we need? We have first the United States law in regard to oleomargarine, and a certain inspection of

tea and drugs, when they are imported from foreign States and countries. A pure food bill was introduced into Congress at the beginning of the last session, the object of which was to improve the method of examination by furnishing competent chemists and well equipped laboratories to the various ports of entry, and also to enact stringent regulations against the manufacture and sale of adulterated food, drugs, etc., in the District of Columbia, and in the Territories. This bill is still in the committee, and it is uncertain what action will be taken. Our State law, as it seems to me, is insufficient. The revised Political Code makes it a misdemeanor to knowingly and willfully adulterate and sell adulterated food, etc. It fails, however, because no special provision is made for its enforcement. This is demonstrated by the experience of other States and other countries. Certain fundamental propositions in connection with the enforcement of regulations against adulterations have already been thoroughly established, and may now be accepted as axiomatic. The law should be very clear, leaving no loophole for escape through technicalities. Provision should be made for the free official analysis or examination of any food that any reasonable person may suspect of adulteration. Upon this point there seems to be little difference of opinion. There should be officers who are charged with the execution of the law. In Massachusetts, New York, and Michigan, this general responsibility is vested in the State Board of Health. In New Jersey and Ohio there is a special Food and Dairy Commission. I am not aware what legislation has been enacted by other States. It is clear that some action is necessary. It seems to me that this power and responsibility can well be placed upon our State Board of Health. Whatever body is charged with this work should have authority to appoint Inspectors, or should accept the Health Officers and Inspectors appointed by County and City Boards of Health. These Inspectors should send samples of food bought by them in the open market to the State Analyst for analysis, giving notice at the time what they are doing. As a rule, the request of any private person would be considered, and the Inspectors should see that the article to which attention was called was satisfactorily investigated.

Coöperation between the State and municipal authorities would simplify and assist and economize very much, otherwise it would be necessary for this body charged with the enforcement of the law to appoint and keep their own Inspectors, etc. What we must in any case depend upon is the support of the law by an intelligent and hearty public sentiment. When this condemns adulteration, no honorable firm and no firm with capital at stake will dare to disregard it. When it is known that there is a fair and honorable inspection of foods, the condemnation of an outraged public will supplement the condemnation of the Court. The dealer will be under a ban and he will feel the verdict of the public more than that of the Court. Perhaps it should be said that this work should be done in a conservative spirit. At times in other places it has been charged that this inspection was given to sensationalism, that the officers were sometimes over zealous to parade before the public the importance of their office. A true conservative spirit should be maintained and the interests of the whole community kept in mind.

In conclusion, I ought to say a word in regard to the pure wine law of this State. I believe that, in general, the effect is good. I know that the wine makers have been very careful to comply with the law. They are working with far greater intelligence than ever before. What is needed is a better provision for enforcing the law in regard to the retail trade.

REPORT OF COMMITTEES ON ORPHAN ASYLUMS AND ALMS-
HOUSES DRAWING AID FROM THE STATE.

REPORT OF COMMITTEE ON PROTESTANT ORPHAN ASYLUM, SACRAMENTO.

To his Excellency GOVERNOR WATERMAN:

The committee appointed by the State Board of Health to examine into the sanitary condition and administration of the Protestant Orphan Asylum, Sacramento, beg leave to report that having examined the building, its accommodations, sanitary condition, and administration, we find the building, although very old, in fair condition, but entirely too small for the purpose designed.

The number of orphans contained in the institution is one hundred and twenty-five at the present time. The sleeping rooms provided for these, give in the aggregate three hundred and thirty cubic feet of air space for each child, which is wholly inadequate to the requirements of the healthy body. The ventilation of these dormitories is obtained only by opening the windows and doors of the rooms, which should be obtained by other means, so that a constant current of fresh air be admitted without giving rise to drafts, which now makes sleeping in these rooms dangerous to children.

The water-closets on the various floors are fitted with the old fashioned dirty pan closets, which it is impossible to keep free from offensive odor; consequently, from their proximity to the sleeping rooms, they are dangerous to the health of the inmates, and should be removed. Indeed, for safety, all the water-closets should be removed from within the house and erected outside the walls, and properly ventilated to prevent all offensive odor. The closets were, however, as clean and well kept as their defective construction would allow.

We find the dormitories scrupulously clean; the beds supplied with sufficient clothing, and the bedding of good quality—all kept very neatly and cleanly. In each room, or adjoining it, are closets for the children's clothes, which are neatly folded and kept in good order. The children are comfortably clad, and each have a bath once every week, besides which they are washed, face, neck, and hands, daily, the younger ones perhaps oftener. The older children have free access to the wash-room and can wash frequently. We examined the heads and persons of many of the children, but found no evidence of vermin in any. The Matron proudly told us we would not find a louse or a bug in the house, which, as far as our observation could enable us to determine, was true.

The children upon interrogation had no complaints to make, physical punishment being the exception and not the rule in the institution.

The diet of the children consists of bread, butter, tea, and hash or mush for breakfast; meat, soup, vegetables, and fruit for dinner; and bread, butter, and tea or water for supper.

The dining room in the basement is large and airy, kept very clean and neatly furnished. The assistants in the house have a separate dining room. The kitchen is detached, comfortable, and attended by two Chinese cooks. They consume daily one hundred and fifty pounds of flour in

bread making, the bread being light, white, and wholesome, and well baked. In the cellar we found abundant supplies of fruit, vegetables, and milk. The meat is bought daily as required. Seven cows supply the milk; the animals are kept on the premises and carefully tended.

The children's small play rooms are in the basement, and in these an hour's religious worship is held daily. In the yard some half dozen closets have been erected, under cover, for boys and girls; they are not of good pattern, and some of them not in working order on our visit. The atmosphere of these closets was foul, although the sewerage is good, being carried in drains to Fifteenth Street, and then pumped by the Shone system into the main sewer.

There is no fault to be found with the asylum in regard to its management. Its sanitary condition is susceptible of much improvement. The health of the children is good at present, and none sick of any infectious disease.

All of which is respectfully submitted.

W. R. CLUNESS,
GERRARD G. TYRRELL,
Committee.

SACRAMENTO, August 7, 1888.

REPORT OF COMMITTEE ON SAN DIEGO HOSPITAL AND ALMSHOUSE.

The committee appointed by the State Board of Health to examine into the sanitary condition and management of the San Diego County Hospital and Asylum, beg leave to report that at the date of visitation, September 11, 1888, the hospital contained forty-five patients; twelve receiving alms. We find the wards large, well ventilated, comfortably furnished, and clean. The bedsteads are iron, with wool mattresses. The food given to the patients is good in quality and quantity, but not well prepared, owing to a deficiency of help. The kitchen is small and not clean. The bathing facilities are sufficient, and each inmate gets a bath once a week. A detached building contains rooms for female patients. The dining room is small and not over clean. The privies are very dirty and need better attention.

The institution is well conducted, and no complaints were made except in regard to the cookery of the food, which can easily be remedied, but we must condemn the sanitary condition of the outhouses and the want of cleanliness in the kitchen and dining room. We stated these conclusions to the officers in charge, and they promised that this matter would at once receive their attention and be remedied.

The inmates appeared to be free from vermin, and had no complaint to make, upon private interviews with several.

H. S. ORME.
G. G. TYRRELL.

REPORT OF COMMITTEE ON SANTA CRUZ FEMALE ORPHAN ASYLUM.

The committee appointed by the State Board of Health to examine into the sanitary condition and administration of the Santa Cruz Orphan Asylum, beg leave to report that at the time of visitation the asylum contained, August 17, 1888, some fifty children, orphans and half orphans.

On the lower floor we found the rooms exceedingly neat, clean, and comfortably furnished. The dining room was quite well furnished with white tablecloths, napkins and rings, knives and forks, delph plates, cups, and saucers, and everything in the nicest order. The kitchen was very neat and scrupulously clean, pantry well supplied with provisions, the bread white, sweet, and well baked. The dietary was ample and varied daily.

In the dormitories we found the bedsteads iron, with straw mattresses overlaid by one of hair, the sheets scrupulously clean, a blanket and comforter, over which was a white counterpane, all in the best order. The floors were perfectly washed and clean: ventilation by windows and doors only.

The first dormitory is fifty-seven by twenty-five by ten, containing thirty-four beds for children between three and eleven years old, with a space for one Sister to superintend. The second dormitory, sixteen by twelve, contained eight beds, and one bed for supervising Sister. We also visited the small infirmary containing two beds, one curtained. The clothes room is a model of neatness, each child's garment having a separate locker and properly numbered.

The wash room was neatly matted, each child having a separate basin, towel, brush, comb, tooth and nail brush, and cake of soap. This was the neatest and most complete lavatory yet seen in any institution, and spoke volumes for the care the children received. The children are bathed regularly once a week in stationary washtubs, and are kept clean and neat. No vermin was found on the children or in the house. The house is devoid of water-closets, like all these old houses, but the privies were perfectly clean and in as good a condition as care could make them.

We were much pleased with this institution; as, after the most rigid examination, we could find nothing to condemn in the way of administration. The sanitation was excellent, with the means at hand. Ventilation was secured by windows, and carefully looked after by the Sisters, and with properly constructed water-closets would be in the best possible condition.

We believe the aid given by the State to this institution well bestowed and faithfully administered. When the new building now contemplated is erected, we believe that nothing further will be desired in making the asylum a perfect type of a well conducted institution.

W. R. CLUNESS.
G. G. TYRRELL.

REPORT OF COMMITTEE ON THE FEMALE ORPHAN ASYLUM, GRASS VALLEY.

The committee appointed by the State Board of Health to examine into the sanitary condition and administration of the Orphan Asylum of Grass Valley, beg leave to report that at the time of visitation, August 20, 1888, the Female Asylum contained two hundred orphans and half orphans; ninety-five children from one to twelve years of age occupied a building detached from the main building.

The dormitories were large, well ventilated, and gave a cubic air space of five hundred feet for each child. The bedsteads were iron, hair mattresses, sheets, blankets, counterpane, and pillows, all perfectly clean and sweet. We found all the rooms well kept, everything in the best of order. The clothes rooms, wash rooms, recreation rooms, and school rooms perfectly clean and neat. The kitchen is large and well appointed. The dining rooms ample and well supplied with service of delph, spoons, knives, forks, and cups.

The dietary is ample and of good quality. The children are well clad, healthy, and well fed, without any complaints of their treatment. We consider this institution well conducted, its sanitary arrangement capable of much improvement in regard to water-closets and drainage, but on the whole it will compare favorably with any other institution of the kind in the State. There is no sickness in the institution, and the perfect cleanliness that is observed keeps the inmates free from vermin.

W. R. CLUNESS.
G. G. TYRRELL.

REPORT OF COMMITTEE ON BOYS ORPHAN ASYLUM, GRASS VALLEY.

The institution contains seventy-five orphans and half orphans.

The dormitories are large; bedsteads of iron; ventilation by windows and doors; bedclothes clean, neat, and in sufficient quantity. The children are washed daily; have a bath once a week; are well clothed; in good health, and free from vermin. We find their dietary ample, of good quality, and well prepared. The lack of sufficient water renders the sanitary arrangements defective, but every care is taken to keep all offensive odors destroyed and the closets clean. We think the institution well conducted, and the appropriation honestly expended. Every place inspected gave evidence of great care in keeping everything clean and sweet, and the boys were loud in their praises of their teachers and guardians.

W. R. CLUNESS.
G. G. TYRRELL.

REPORT OF COMMITTEE ON HOME FOR FEEBLE-MINDED CHILDREN.

The committee appointed by the State Board of Health to report upon the sanitary condition and administration of the Home for Feeble-Minded Children at Santa Clara, beg leave to report that they visited the institution August 14, 1888, and learned that there was then one hundred children upon the roll-call. We were conducted round the premises by Dr. Osborne, the Superintendent. The main school room was clean and well ventilated. The closets were of the latrine pattern, flushed frequently and without odor; these, with the wash basins, were properly trapped and in good order.

The primary class room accommodates fifteen pupils, giving an average of nearly two hundred cubic air space for each scholar. The higher class room accommodates ten scholars, where music, history, geography, and ornamental work is taught by a salaried teacher. The dormitories were next visited: we found them neatly kept and perfectly clean. The beds were brass and supplied with straw and hair mattresses, blankets, sheets, counterpane, all perfectly clean and in sufficient quantity. The large dormitory contained seventeen beds, giving a cubic air space of five hundred feet for each boy.

The ventilation is by windows and doors, with closets and bath room off dormitory, all well trapped, clean, and without odor. The dormitory for small boys is forty by twenty-three by twelve, containing twenty-three children, giving an average air space of five hundred feet for each boy. The bedsteads are brass, well supplied with bedding, and everything neat, comfortable, and clean. The latrines or closets with wash rooms off the

dormitory, are properly trapped and ventilated and emit no odor. The play room is heated by an iron stove, properly guarded against accident. Physical correction of the children is not permitted in the institution. The dining room contains seven tables, well furnished with white tablecloths, glasses, knives, forks, spoons, saltcellars, and crockery ware. The kitchen is ample, clean, and neatly furnished. The store room is well provided with provisions and groceries.

Outside the main building is a preserving room where the larger girls are employed cutting up and canning fruit. The cook's pantry is well provided with flour; ten barrels a month being used. Two hundred loaves are baked each week. The bread is white, sweet, and well baked. Seven cows are kept by the institution, which supply an abundance of fresh milk.

In a separate building from the main one is the girls' department, consisting of a dormitory for small girls, containing twenty-two beds; this is well lighted and ventilated; also a small room containing three beds; in another room are nine beds for epileptic inmates. These are all supplied with wash, bath rooms, and water-closets—everything neat and clean.

The water supply is obtained from a well one hundred and four feet deep, pumped by steam into large tanks, some seventy feet high. The laundry is supplied with steam power, and all washing and ironing is done by machinery.

The sewage is carried away by large drains into a field and there emptied into a large covered cesspool, some five hundred feet from the house.

The institution is under the medical charge of Dr. Osborne, and the management of the children under the care of the doctor's wife, Mrs. Osborne. Under the care of these officers, we find the institution most excellently managed; its sanitary arrangements as perfect as possible to make them; the children as clean, tidy, and well cared for as assiduous attention can bestow; and believe that this institution will compare favorably with any asylum of like character in the United States. We have nothing but commendation to offer, and think the aid conferred by the State is administered honestly and economically.

GERRARD G. TYRRELL.
W. R. CLUNESS.

REPORT OF COMMITTEE ON FEMALE ORPHAN ASYLUM AT SAN JUAN.

The committee appointed by the State Board of Health to examine into the sanitary conditions and management of the Orphan Asylum of the Sacred Heart, at San Juan, San Benito County, beg leave to report, that at the time of visitation, August 18, 1888, there were in the institution seventy orphans and half orphans. The building is old and needs enlarging, but everything about it was neat and clean. The dormitory down stairs contains forty-seven beds for girls of all ages; it is fifty by thirty-two by twelve, giving a cubic air space for each child of four hundred feet. The ventilation is had through ventilators in walls and by windows. The bedsteads are iron with wire mattresses; straw bedding with sheets, blankets, counterpanes, and feather pillows; beds and clothing changed every week. A small dormitory containing two beds is on this floor for sick children; also a room for the occupancy of the Sisters. All beds, coverings, floors, etc., beautifully neat and clean. Up stairs is a dormitory ninety by thirty by ten, containing twenty-four beds, with same furniture as down stairs. Adjoining is a small room for Sisters.

The washing or bathing room contains twelve porcelain basins, with

lockers for brushes, combs, soap, tooth brushes, and towels. The children are washed face, hands, and feet every day, and a general bath once in two weeks.

The sanitary arrangements for removing excreta is by tin buckets, there being no water-closets in the house. The buckets are removed and emptied every morning. This should be obviated by the erection of properly constructed closets, as more conducive to that propriety and modesty so inherent in the female mind.

The laundry is in a detached building, and no fault can be found with its management. The bath rooms were old, but clean, and were supplied with both hot and cold water. Seven water-closets were in the yard, kept clean, without odor, and unobjectionable. The dining room was well furnished with delph dinner service, knives, forks, glasses, and napkins, all scrupulously neat and clean. Water is supplied by a deep well and wind-mill.

No sickness was in the institution, all the children being in good health.

The school rooms were rather small for the number of children assembled. The pupils are, in addition to a good English education, taught embroidery and fancy work.

Examined the children and found them clean, comfortably clad, devoid of vermin, and emphatic in their declaration that they were well fed and cared for. Examined their dietary, and found it ample and of good quality. We are of the opinion that this institution deserves the support it receives from the State, and applies the money so received judiciously and well. No fault can be found with its administration, and its sanitary condition is as good as its means will allow.

W. R. CLUNESS.
G. G. TYRRELL.

REPORT OF COMMITTEE ON PAJARO MALE ORPHAN ASYLUM.

The committee appointed by the State Board of Health to examine into the sanitary condition and administration of the Pajaro Valley Orphan Asylum, beg leave to report that upon the occasion of our visit (August sixteenth) the institution contained one hundred and eighty-seven boys, from two to fourteen years old—orphans and half orphans—under the superintendence of Father Clementine. The study hall is quite a large hall, seventy-two feet long and twenty-eight feet wide, with a height of twelve feet; it was clean and well furnished for the use intended. The smaller recitation rooms were also clean and neat. Up stairs the dormitories are provided with wooden bedsteads, straw mattresses, sheets, blankets, and quilts; fairly clean. No vermin were discovered. The floors were swept every morning, and the bed linen changed once a week. The dormitories are under charge of a lay Brother who sleeps off the room. Ventilation is by windows.

The first dormitory contains twenty beds for large boys. The room is thirty by twenty-eight by twelve, giving a cubic air space of four hundred feet, which is nearly sufficient.

The second dormitory for smaller boys is also thirty by twenty-eight by twelve, and contains twenty-five beds (this is for medium sized boys) with same cubic air space. The teacher, Professor McDonough, sleeps in a room between these dormitories, and overlooks the rooms at night.

The third dormitory is seventy-two by twenty-eight by eleven, and contains beds for fifty boys. The fourth dormitory is the same size as the third, and likewise contains fifty beds for medium-sized boys. Ventilators

are placed in the walls near the roof in each of these dormitories, which, with the windows, give good ventilation. The upper dormitory is ventilated by an opening in the ceiling, and contains a less number of beds. The floors are all swept every morning.

There are no water-closets in the building, the night soil and urine being received in chambers in the rooms, which are emptied every morning. The lavatory, or wash room, is inadequate, but washes twenty boys at a time. The boys wash their faces and hands whenever they are dirty. Their bodies are washed once a week by hand, there being no bath rooms in the building; in the summer they are allowed to bathe in the lake at the rear of the building.

The privies are twelve in number, and empty into a latrine, which is filled with water and emptied once a week into a wooden sewer, which runs into the lake.

The water for the wash room is obtained by pipe and windmill from the lake. The laundry is adjoining, the washing being done by two Brothers of the Order, assisted by the larger boys, every Monday. The water for the laundry is also obtained from the lake. Comment is useless, for, although the lake is large, the water is more or less polluted.

The clothes room is in another building; the clothes are neatly folded in separate divisions and properly numbered. Adjoining this room is one where a tailor is employed to keep the clothes in order. Close by is the shoemaker's shop, where shoes are mended and the older boys taught the trade, if so desired.

A drug store is neatly fitted up and well stocked, under the supervision of a lay Brother.

There is no sickness in the asylum, and the children were all vaccinated, but not with that success which is absolutely necessary to insure safety.

The dining room is large and commodious, and furnished with tin cups, plates, and spoons. The kitchen is well furnished. There is a bakery attached, which uses a barrel of flour daily. The bread is white and brown, well baked, light, and nutritious. The butcher shop is in the yard, supplying thirty to forty pounds of meat daily. The butcher kills one steer and a pig monthly. The garden supplies all vegetables. Fruit is abundant and of good quality. The boys being assembled, we carefully examined them, found them well clad, clean, and without vermin. No corporal punishment is inflicted. The boys were interrogated and had no complaints to make; said they were well fed, slept warmly, and were well taken care of. We find the institution well managed, the sanitary arrangements being however deficient, tending to promote illness and to impair the general health of the boys. The food is ample, of good quality, and well cooked, and we believe the funds of the State are honestly applied for the purpose intended. If the bathing and removal of excrementitious matters were improved by proper sanitary arrangements, we believe no fault could be found with the asylum.

W. R. CLUNESS.
G. G. TYRRELL.

REPORT OF COMMITTEE ON HOME OF BENEVOLENCE, SAN JOSÉ.

The committee appointed by the State Board of Health to examine into the sanitary condition and administration of the Home of Benevolence, San José, beg leave to report that at the time of our visit, August fourteenth, the institution contained fifty-nine children, whose ages ranged from two to

thirteen years. The children's sitting room, for boys and girls, the dimension of which was thirty by forty feet, was comfortably furnished, and kept clean: ventilation by windows. One room was devoted to sewing, where children's clothes were made and mended: in this room were clothes presses and wash room. The children have each a full bath once a week.

In the basement beneath the house is the children's play room—earthen floor, basement unfinished, not in good sanitary condition, and too dirty for the purpose intended. The privies are in the yard, about one hundred feet from the house: male and female closets under same roof, divided by partition, both filthy and horribly offensive. The boys' playground is divided from the girls by a latticed fence.

Four cows are kept in stable in this yard, which supply milk and butter in part to the institution. The main building is heated in winter by furnace.

Examined the children, detected no vermin. The children were fairly clad, contented, and had no complaints to make. Passing into the house and upstairs, we examined the dormitory for middle-sized boys. It contained twenty beds. Bedsteads of iron, mattress straw, with blanket, sheet, and counterpane, all neat and clean: room carpeted down center with home-made rag carpet. Off this room is sleeping apartment for lady in charge of dormitory. Second dormitory contains eight beds for boys under ten years of age. Furniture same as other dormitory and equally clean. Third dormitory contains eight beds for larger boys, which did not differ from the others.

The wash room for boys is not large enough. There is but one bathtub in the house, and one old-fashioned pan water-closet, which is only used in case of necessity. The urine and other excrementitious matters are collected in cans, and removed each morning from the dormitories, an indecent and disgusting mode of procedure, but no other is available in the institution at present.

In the girls' department, the rooms are just like the boys'. The beds are clean, and sufficient clothing is provided. The floors are painted, and rag carpets occupy the center of each dormitory. The sanitary arrangements for night soil is on the same plan, and even more to be condemned than for the boys', as it tends to lessen that innate modesty peculiar to the female sex, and is destructive of all privacy.

Physical punishment is not applied to either sex, except in the mildest form.

The dietary is ample and of good quality. The bread sweet, white, well baked, and wholesome; meat is given daily.

The water is supplied by a well, and appears to be of good quality. We must, however, condemn unqualifiedly the sanitary condition of the out-houses and privies, and the mode of receiving the night soil in the institution. We also must condemn the absence of sufficient bathing facilities for both boys and girls, and recommend that a covered bath-house be erected, properly supplied with bathtubs and modern water-closets for the use of the inmates.

W. R. CLUNESS.
G. G. TYRRELL.

REPORT OF COMMITTEE ON INSANE ASYLUM, STOCKTON.

The undersigned, a committee chosen by the State Board of Health July 26, 1888, to make an examination into the sanitary condition of such

public institutions in Southern California as draw money from the State Treasury, have attended to the duty assigned to them, and would now respectfully report:

On July twenty-seventh we visited the State Insane Asylum at Stockton. We were very kindly received by the Superintendent, Dr. W. H. Mays, who offered us every facility for a thorough examination of the institution. While we find much to commend, there were some matters which we feel to be our duty to condemn, and of sufficiently vital importance to bring to official notice, and recommend immediate attention thereto.

The first and most important point to which we would call attention, is the crowded condition of the institution. Allowing the regular legal amount of cubic air space per capita, we find there is not quite room for one thousand two hundred persons to be accommodated, while the present number is near one thousand seven hundred. For that number of patients we think the medical attendance too small. With so few medical officers it is utterly impossible to render to each case such care and attention as their physical wants require, not mentioning that care that their unfortunate mental condition demands and in this enlightened age should receive. There should be not less than two more physicians, and they should reside on the premises. We were much surprised to find that the ventilating shafts from wards in lower stories of female department terminated in the attic story, in which now, on account of the crowded condition of the building, the Superintendent is obliged to place patients, thus subjecting them to an exposure to the vitiated air arising from the lower stories. We recommended immediate attention to carrying these air shafts through the roof. We found the south wall of female department in a very bad condition; the bricks of which being porous, and not covered by paint or cement, allow the rain and moisture to percolate through them, thus rendering the inner walls and ceiling damp, and capable of producing much discomfort as well as danger to the health of the patients.

We called the attention of the Directors to a few other matters strictly within their province, separate from legislative enactment, and they cheerfully remedied them.

The matter of the sewerage of the institution, which is in a very bad condition, is now receiving the earnest and active consideration it deserves.

The sum total of the condition of this institution is that the Directors are expected to accomplish too much with too little money. The legislative appropriations are too small for the successful management of a public charity of the magnitude of the Stockton Insane Asylum.

H. S. ORME.
C. A. RUGGLES.

REPORT OF COMMITTEE ON SAN JOAQUIN COUNTY HOSPITAL.

On July twenty-eighth we visited and critically examined the County Hospital of San Joaquin County. We find it to be a large, comfortable, and commodious wooden building, well adapted to hospital purposes. It is situated on the eastern border line of the City of Stockton. The supply of water is from the city waterworks and from deeply cased wells, is of excellent quality, and abundant in quantity. The building is well supplied with hydrants and hose, and well protected from fire. The drainage and sewerage is good. We found fifty-four persons receiving aid from the State Treasury. From personal examination and conversation, we found them

well cared for, well fed, well clad, and as happy and contented as could be expected under the circumstances. We found that the officer in charge had segregated those drawing State aid. We advised that the separation be discontinued, as it tended to cause a feeling of superiority over the strictly county inmates, which suggestion was immediately adopted.

H. S. ORME.
C. A. RUGGLES.

REPORT OF COMMITTEE ON COUNTY HOSPITAL, LOS ANGELES.

The County Hospital of Los Angeles County was next visited by us. Great courtesy and kindness were showed us by the Resident Physician and his assistant. The total number of patients was one hundred and forty-five, of which number twenty-five were receiving aid from the State. They were critically examined and closely questioned, and were found to be well clad, well fed, well cared for, and happy and contented. We cannot say that we were much pleased with the hospital building, as it is very poorly adapted to the purpose designed. It surely would not receive the indorsement of modern sanitary engineers. There are too many patients in a limited space: the wards are very much crowded, but that difficulty will soon be remedied, as we are assured by the Supervisors that as soon as the building now being erected at Downey is completed at least sixty persons will be removed thereto. The water supply is very limited—too small for successful flushing of hospital drains, and no protection against fire. The water-closets are unfortunately placed in the building, and, in consequence of the small supply of water for flushing purposes, are in a very unsanitary condition. The drains carry off, to an open cesspool in a distant ravine, the entire sewage of the institution, far enough away from the building as not to affect it, but near enough to surrounding property to be an intolerable nuisance, destructive to the personal enjoyment of property and dangerous to public health.

C. A. RUGGLES.
H. S. ORME.

REPORT OF COMMITTEE ON STATE NORMAL SCHOOL.

The State Normal School at Los Angeles was visited and thoroughly examined. At the last visit of a committee of this Board many valuable and important suggestions for change and improvement were made to the officers in charge. We find that all of those suggestions have been adopted. Great improvements have been made in ventilation and sewerage, and it affords us much pleasure to say that the institution is in an excellent condition.

C. A. RUGGLES.
H. S. ORME.

REPORT OF COMMITTEE ON LOS ANGELES ORPHAN ASYLUMS.

We next visited the Los Angeles Orphan Asylum (Catholic). It is to be much regretted that the management of this charity are compelled to continue in this ancient, antiquated building, so utterly and completely

unfit for an institution of that character and magnitude, many portions of the building unsafe as well as untenable. We learn with pleasure that the plans are drawn for a larger and better building, and it will soon be completed, in which very particular attention has been given to provide a thorough system of ventilation and all other sanitary improvements. We found one hundred and fifty-four inmates—thirty-three whole orphans, and one hundred and twenty-one half orphans. The building is ventilated by means of doors and windows. There are eight dormitories, averaging thirty-three feet by twenty-three feet and ten feet high, with an average of twenty-one beds in each ward, occupied by twenty-one children; a Sister always sleeps in the same room with the children. The institution has been peculiarly favored during the year as to sickness. Only five cases of measles, with no deaths, have occurred. The water supply is from the city waterworks, is ample and of good quality. The water-closets, as is all the household sewage, are discharged into public sewers by pipes which are properly trapped. We made a careful personal inspection of the children and found them cleanly, well fed, well clothed, and happy.

On August third, we visited the Los Angeles Protestant Orphan Asylum. The present number of inmates is eighty-one—fifty-eight boys and twenty-three girls. There are six whole orphans and seventy-five half-orphans. The building is old, and for an institution of this size and character it is highly unfit, having outlived its usefulness. The new building now being erected will soon be ready for occupancy, and will have all the modern improvements of a sanitary nature. The present building is ventilated by doors, transoms, and windows. The wards or dormitories are too crowded. No matron or attendant sleeps in same room with the children. We advised a change in that respect, as accidents and sudden sickness are liable to take place in the night, when the assistance of an attendant would be very necessary. The water is supplied by the city waterworks; it is very good and abundant. The children are cleanly, well clad and well fed, and to all appearances happy and contented. From our examination of this institution we would draw these conclusions: *First*—Too much crowded condition of building. *Second*—An unsanitary condition of water-closets and their surroundings. All of which we believe will be remedied on occupation of the new building.

C. A. RUGGLES.

H. S. ORME.

REPORT OF COMMITTEE ON ST. VINCENT'S ORPHAN ASYLUM, SANTA BARBARA.

We then visited the St. Vincent's Female Orphan Asylum, at Santa Barbara. We were very kindly received by the Sisters in charge, who afforded us every facility for a complete and thorough examination of the institution. We were conducted through all the dormitories, school rooms, dining rooms, and cooking rooms. The children were drawn up in line for personal inspection, the authorities courting the most critical examination possible. It is conducted by the Roman Catholic denomination. The present number of inmates is fifty-five—twenty-six whole orphans and twenty-nine half orphans. The building is well ventilated by doors and windows. There are two dormitories, each seventy-five feet by thirty feet, and sixteen feet high. In one dormitory there are twenty-five beds, and thirty in the other. Two Sisters sleep in each ward to render any assistance to the little ones at night. The water supply is from the city waterworks, is good, and

amply sufficient. The water-closets are separate from the building, discharging into cesspools, which are often emptied and disinfected. The children are well clad and well fed. A personal examination of food showed it to be of the best quality, and the larder well supplied with all the necessaries, and many luxuries, of life. We would express ourselves as well satisfied with the condition and management of this institution.

C. A. RUGGLES.

H. S. ORME.

REPORT OF COMMITTEE ON MERCED COUNTY HOSPITAL.

The County Hospital of Merced County was next visited. The institution is situated about one mile south of the town of Merced, near the line of the Southern Pacific Railroad. The buildings are old and illy adapted to hospital purposes. We regretted the absence of Dr. Rucker, the physician in charge, but were shown every attention by the Steward. We found that there were seventeen patients drawing State aid. A personal examination showed them to be in a happy, contented condition, well clad, and well fed. The building is well ventilated. The water supply is good and abundant. The sewage is conducted in pipes to a large cesspool fifty yards from the building.

CHAS. A. RUGGLES, M.D.

HENRY S. ORME, M.D.

REPORTS ON INDIGENT SICK IN COUNTY HOSPITALS.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Mono County Hospital for the year ending June 15, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease.	Total by each Disease	DISEASES.	No. Deaths by each Disease
5	Rheumatism	0	1	Chronic syphilis	0
1	Typho-malarial fever	0	1	Hypertrophy of heart	1
1	Cystitis	0	3	Wound	0
1	Paralysis	0			

Number of months reported	12	Discharged	3
Total on hand at commencement of year ..	2	Died	1
Total admitted	11	Percentage of deaths	7.5
Discharged cured	7	Remaining under treatment	2

Name and location of hospital: MONO COUNTY HOSPITAL, Bodie, California, eight thousand three hundred and fifty feet above sea-level.

Physician's name and Post Office address: D. WALKER, M.D., Bodie, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Merced County Hospital for the year ending May 31, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease.	Total by each Disease	DISEASES.	No. Deaths by each Disease
4	Rheumatism		1	Laryngitis	
9	Intermittent and bilious fever	1	2	Suppressed secretion	
9	Accidental injuries		12	Ulcer of leg	
3	Lumbago		4	Measles	
2	Asthma		1	Dyspepsia	
8	Dysentery	1	1	Spinal disease	
3	Alcoholism	1	1	Pleurisy	
1	Cancer	1	1	Hemorrhage of bladder	
3	Typhoid fever	1	2	Locomotor ataxia	
3	Bronchitis		1	Sunstroke	
4	Phthisis pulmonalis		1	Tonsilitis	
2	Tuberculosis mesenterica	2	1	Syphilis	
4	Pneumonia	1	1	Paralysis	
2	Erysipelas		1	Heart disease	
1	Inguinal hernia	1	22	Indigent	

Number of months reported	12	Discharged	79
Total on hand at commencement of year ..	19	Died	9
Total admitted	90	Remaining under treatment	21
Discharged cured	63		

There are three of us that have the hospital here, and as we attend it month about, I cannot vouch for this being critically correct. The condition and location are fair. Sewage runs into a cesspool, covered. Ventilation is very good in the large new ward, but the

balance of the structure, which is old, and was moved to the present site, consists of small rooms, and the ventilation is faulty. This old part has been used about fifteen years; was moved and refitted about four years ago. The cases of intermittent fever are brought from a distance, there being no case within eighteen miles of this town at present. The twenty-two cases marked "indigent" are old, broken-down men, who are out of funds, not able to earn a living, with nothing special the matter with them. Women are seldom admitted. The Supervisors generally allow a monthly stipend (\$15) to their friends to care for them outside, although we now and then have one. One case of locomotor ataxia has been bed-ridden for about seven years. The cases of phthisis remained awhile, and asked permission to leave, as they frequently do.

Name and location of hospital: MERCED COUNTY HOSPITAL, Merced County, California.
Physician's name and Post Office address: H. N. RUCKER, Merced, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Fresno County Hospital for the year ending June 30, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease	Total by each Disease	DISEASES.	No. Deaths by each Disease
3	Diarrhœa	1	2	Heart disease	
4	Dysentery		9	Paralysis	
4	Smallpox (at the pesthouse).....		3	Convulsions	
5	Measles		14	Rheumatism	
2	Diphtheria		2	Burns	1
2	Erysipelas		1	Blind	
2	Typhoid fever	1	10	Injuries, external	
20	Remittent and intermittent fever		7	Simple fractures	
5	Chronic alcoholism	3	5	Compound fractures	
13	Phthisis pulmonalis	4	10	Tertian syphilis	
11	Pneumonia	2	2	Carbuncle	
4	Pleurisy		3	Granulated eyelid	
9	Bronchitis	2	1	Gunshot wound	
1	Asthma		1	Cystitis	
16	Disease of stomach and bowels.....	2	1	Snake bite	
2	Disease of the liver		2	Necrosis	
3	Bright's disease and nephritis.....	2			
Number of months reported		12	Discharged		10
Total on hand at commencement of year		33	Died		18
Total admitted		186	Percentage of deaths		9 3/4
Discharged cured		127	Remaining under treatment		31

In October next we shall be in our new hospital building which is now being erected, and will cost \$25,000, and is being built on the plan of the Sacramento County Hospital. It is located about two miles east of Fresno, on high ground, and fine facilities for drainage. Street railroad running within one hundred yards of it. It consists of eighty acres, purchased by the county about two years ago at a cost of \$120 per acre, and can now be sold for \$500 per acre. I established the Fresno County Hospital in 1871, and have had the entire control and management of it since. I furnish everything, and manage it as I do my family; make and present my bill monthly, which is always paid.

Name and location of hospital: FRESNO COUNTY HOSPITAL, Fresno, California.
Physician's name and Post Office address: LEWIS LEACH, Fresno, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Plumas County Hospital for the six months ending June 30, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease.	Total by each Disease	DISEASES.	No. Deaths by each Disease
1	Paralysis		1	Frostbite	
9	Chronic rheumatism	1	1	Eczema	
2	Old age		1	Syphilis	
1	Pelvic abscess		1	Valvular disease of the heart	1
1	Varicose veins		1	Neuralgia	

Number of months reported	6	Discharged cured	6
Total on hand at commencement of year ..	10	Died	1
Total admitted	19	Remaining under treatment	12

The Plumas County Hospital is situated one mile from Quincy, and is in a pleasant, sunny place. The building was built for the purpose; it is one hundred feet long by twenty-six feet wide, with an L forty-two by twenty feet, and is well built and furnished. Sewerage and ventilation good. Supplies everything that is needed. Medical attendance as often as needed, or at least twice a week. Each patient has a room eleven feet by nine and one half feet, and eleven feet high. Water supplies are good—plenty of cool spring water.

Name and location of hospital: PLUMAS COUNTY HOSPITAL, Quincy, California.

Physician's name and Post Office address: L. F. CATE, Quincy, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Lassen County Hospital for the month ending June 30, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease	Total by each Disease	DISEASES.	No. Deaths by each Disease
1	Endocarditis		1	Compound fracture of tibia and fibula, followed by secondary amputation	
1	Tertian syphilis				

Number of months reported	1	Remaining under treatment	3
Total admitted	1		

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the San Luis Obispo County Hospital for the half year ending June 30, 1888.

Total by each Disease.	DISEASES.	No. Deaths by each Disease.	Total by each Disease.	DISEASES.	No. Deaths by each Disease.
1	Fever, intermittent		1	Conjunctivitis	
1	Variola	1	1	Sycosis menti	
1	Rubeola		2	Alcoholism	
7	Rheumatism		1	Curvature of spine	
1	Nephritis		1	Dislocation of spine	
1	Hæmatemesis		1	Fracture of femur	
1	Diarrhœa		1	Incised wound	
3	Phthisis	3	1	Ulcer of leg	
2	Syphilis		1	Paralysis	
1	Peritonitis	1	6	Contused wounds	
3	Bronchitis				

Number of months reported	6	Discharged cured	38
Total on hand at commencement of year ..	18	Died	5
Total admitted	38	Remaining under treatment	13

Name and location of hospital: SAN LUIS OBISPO COUNTY HOSPITAL, San Luis Obispo, Cal.
Physician's name and Post Office address: W. W. HAYS, San Luis Obispo, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Contra Costa Hospital for the three months ending July 31, 1888.

Total by each Disease.	DISEASES.	No. Deaths by each Disease.	Total by each Disease.	DISEASES.	No. Deaths by each Disease.
2	Eczema		1	Paralysis	
1	Gastritis	1	1	Tumor	
1	Fracture of skull	1	4	Bronchitis	
4	Rheumatism		2	Pneumonia	1
1	Fracture of leg		1	Cancer of the stomach	1
1	Fracture of toe (amputation)		1	Rupture of bowels	1

Number of months reported	3	Discharged	5
Total on hand at commencement of year ..	23	Died	5
Total admitted	23	Remaining under treatment	17
Discharged cured	17		

Name and location of hospital: CONTRA COSTA COUNTY HOSPITAL, Martinez, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Los Angeles County Hospital for the six months ending August 31, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease	Total by each Disease	DISEASES.	No. Deaths by each Disease
5	Aneurism aorta.....	1	3	Jaundice.....	1
5	Abscess.....	1	2	Masturbation.....	1
7	Anchylosis.....	1	1	Nasal catarrh.....	1
2	Amputation.....	1	3	Neurasthenia.....	1
1	Apoplexy.....	1	3	Neuralgia.....	1
10	Asthma.....	1	4	Necrosis.....	1
1	Ascetis.....	1	2	Orchitis.....	1
12	Bubo.....	1	1	Opium poisoning.....	1
8	Bronchitis.....	1	2	Ophthalmia.....	1
7	Bright's disease.....	3	1	Pleuro-pneumonia.....	1
4	Burns.....	1	46	Phthisis.....	29
5	Cancer.....	1	9	Pneumonia.....	3
1	Conjunctivitis.....	1	9	Pleurisy.....	1
1	Cerebro-spinal meningitis.....	1	5	Pregnancy.....	1
2	Concussion of brain.....	1	14	Paralysis.....	3
2	Carbuncle.....	1	1	Paralysis optic nerve.....	1
1	Congestion of brain, acute.....	1	2	Psoas abscess.....	2
1	Cataract.....	1	3	Prostatitis.....	1
2	Coxitis.....	1	3	Rubeola.....	1
1	Chorea.....	1	2	Railroad accident.....	1
11	Dysentery.....	1	50	Rheumatism.....	1
14	Delirium tremens.....	2	42	Syphilis.....	1
6	Dislocations.....	1	11	Sprains.....	1
3	Diarrhœa, chronic.....	1	5	Skin disease.....	1
3	Dyspepsia.....	1	5	Stricture urethra.....	1
3	Epilepsy.....	1	5	Septicæmia.....	2
3	Erysipelas.....	1	2	Starvation.....	1
4	Fistula in ano.....	1	1	Syphilitic hepatitis.....	1
7	Fractures.....	1	1	Sciatica.....	1
3	Furuncle.....	1	1	Sunstroke.....	1
38	General debility.....	3	1	Tuberculosis of testicle.....	1
5	Gonorrhœa.....	1	1	Typhoid pneumonia.....	1
2	Hernia, strangulated inguinal.....	1	18	Typhoid fever.....	5
2	Hydrocele.....	1	2	Uterine disease.....	1
4	Hemorrhoids.....	1	1	Variola.....	1
5	Heart disease.....	1	8	Varicose veins.....	1
15	Intermittent fever.....	1	5	Wounds, contused.....	1
7	Insanity.....	1	7	Wounds, incised.....	1
1	Internal injuries, fall.....	1	1	Wounds, lacerated.....	1
4	Influenza.....	1	4	Wounds, gunshot.....	1
Number of months reported.....		6	Discharged improved.....		56
Total on hand at commencement of year.....		162	Died.....		65
Total admitted.....		489	Remaining under treatment.....		133
Discharged cured.....		400			

Los Angeles County Hospital and Farm is situated in Los Angeles County, about one mile east of the city, on a farm of thirty-seven acres of rolling ground; is high and dry, with a fine view of the city and surrounding country. The hospital is surrounded by a fine orchard of orange, lemon, apple, peach, fig, and other fruit trees. The front is nicely laid out in flowers, and each side of the entrance road is bordered with cypress hedges, as is the front on both sides of the entrance. Along the sides and back are numerous pepper trees, for shade. The hospital is a large fine building of wood, two stories high, each twelve feet in clear, hard finished throughout, is set up about five feet from the ground, with wide porches around the front of building, and a wide porch above and below in the rear; containing seven large wards in the main building and two sunny wards in the rear, which are used for consumptive patients; each with nine or ten beds, each lighted with nine large windows. Both wards stand up ten feet above the ground; under one is the laundry fitted up with stationary tubs and hot and cold water. The seven large wards in the main building have room for ten or twelve beds in each. Two of the wards on the south each have five large windows; the two on the east and west front each have four windows. The main hallway is twelve feet wide; cross halls between the wards are ten feet wide. There are water-closets and bath rooms on each floor. The front is occupied as office, dis-

pensary, and storeroom, on one side of the hall; the other is occupied as reception room and library. The second floor has three of the large wards and four smaller rooms that are occupied by the steward, matron, and nurses. In the rear of the main building, between the two wards in the rear, is the dining room, seating at present fifty-four; under the dining room is the kitchen, fitted up with range and hot-water tank, also storeroom and dining room for employes. The house is supplied with water from the city water works. The sewerage is good, having a fall of about fifty feet, to a ravine with running water in, in the rear of the farm. Supplies are bought in Los Angeles as needed. Dr. Barton Dozier is medical attendant—visits every day. The house was built in 1878, and is now in good condition. The area to each patient I do not know.

Name and location of hospital: LOS ANGELES COUNTY HOSPITAL, Los Angeles, California.
Physician's name and Post Office address: BARTON DOZIER, Los Angeles, California.

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK

Treated in the Kern County Hospital for the year ending May 31, 1888.

Total by each Disease	DISEASES.	No. Deaths by each Disease	Total by each Disease	DISEASES.	No. Deaths by each Disease
20	Malarial	1	9	Secondary syphilis	
6	Malarial fever		6	Paralysis	1
4	Consumption	2	18	Rheumatism	
7	Pneumonia	2	2	Diabetes	
2	Bronchitis		1	Fracture of leg	
5	Dysentery	2	1	Fracture of arm	
2	Measles		4	Asthma	1
2	Typhoid fever		20	Biliousness	
1	Typhoid pneumonia		12	General debility	1
1	Erysipelas		1	Ovaritis	
7	Alcoholism	1			
Number of months reported		12	Discharged		129
Total on hand at commencement of year		13	Died		11
Total admitted		131	Percentage of deaths		12
Discharged cured		112	Remaining under treatment		16

The Kern County Hospital is situated one third of a mile southwest of the town of Bakersfield, and consists of a frame building. Two wards, twenty by thirty feet, each containing eight beds; also three single rooms, twelve by fourteen feet—two of them containing two beds each, and the other one bed—office and dispensary, hall, kitchen, dining room, and bath room, with a ten feet wide porch on the north and east side of the building. There is also a block of land, appropriated for recreation grounds and the raising of fruit and vegetables. The hospital receives its supply of water from the Bakersfield water works. The system of sewerage is ample for the accommodation of the institution. Dr. L. S. Rogers is the attending physician. The steward regulates the furnishing of supplies and medicines, there being no contract system. The Board of Supervisors pays all bills.

Name and location of hospital: KERN COUNTY HOSPITAL, Bakersfield, Kern County, Cal.
Physician's name and Post Office address: L. S. ROGERS, Bakersfield, California.

FINANCIAL STATEMENT.

STATEMENT

Of the Expenses of the State Board of Health for Thirty-eighth Fiscal Year, ending June 30, 1887.

1886.			
Appropriation.....			\$1,250 00
July	1—Post Office rent.....	\$2 00	
	3—Traveling expenses of Dr. Briceland.....	35 00	
	Traveling expenses of Dr. H. S. Orme.....	50 00	
	Traveling expenses of Professor Rising.....	10 00	
	Postage stamps, Dr. Orme.....	10 00	
	12—Postal cards.....	12 00	
	28—Expressage.....	65	
	Rent of office.....	25 00	
Aug.	30—Stamps.....	10 00	
	Telegrams.....	1 25	
	Office rent.....	25 00	
Sept.	1—Post Office rent.....	2 00	
	Expressage and telegrams.....	2 50	
	Rubber stamps for office.....	4 50	
	28—Postage stamps.....	10 00	
	30—Office rent.....	25 00	
Oct.	5—Telegraph and expressage.....	2 75	
	10—Blank cards, \$1; Sanitary News, \$2.....	3 00	
	Sanitary Engineer.....	4 00	
	19—Traveling expenses of Dr. H. S. Orme.....	50 00	
	Expenses to Toronto, American Public Health Association.....	100 00	
	Traveling expenses of Dr. H. C. Crowder.....	8 00	
	Traveling expenses of Dr. J. M. Briceland.....	25 00	
	Traveling expenses of Dr. Jas. Simpson.....	12 00	
	20—Conference Board of Health.....	5 00	
	Annals Hygiene.....	2 00	
	Stamps for biennial report.....	45 00	
	Expressage.....	2 40	
	Office rent.....	25 00	
Nov.	1—Postage stamps.....	10 00	
	6—American Public Health Association, vol.....	5 00	
	Expressage.....	1 05	
	30—Postage stamps.....	20 00	
	Office rent.....	25 00	
Dec.	9—Postal cards.....	5 00	
	11—Stamps.....	5 00	
	31—Office rent.....	25 00	

FINANCIAL STATEMENT—Continued.

1887.			
Jan.	3—Post Office rent.....	\$2 00	
	5—Expressage and telegraphing.....	4 15	
	13—Traveling expenses of Dr. Orme.....	50 00	
	Traveling expenses of Dr. Briceland.....	25 00	
	27—Postage stamps.....	15 00	
	Office rent.....	25 00	
Feb.	5—Sanitarian.....	4 00	
	Stamps.....	5 00	
	20—Telegraphing.....	2 40	
	26—Traveling expenses.....	10 00	
	28—Telegrams.....	2 00	
	Expressage.....	2 95	
	Office rent.....	25 00	
Mar.	1—Telegrams and expressage.....	31 70	
	30—Stamps.....	10 00	
	Post Office rent.....	2 00	
	Rent of office.....	25 00	
April	10—Traveling expenses of Dr. H. C. Crowder.....	8 00	
	Traveling expenses of Dr. Briceland.....	20 00	
	Traveling expenses of Dr. H. S. Orme.....	70 50	
	Traveling expenses of Dr. G. G. Tyrrell.....	20 00	
	Telegraphing.....	6 00	
	Stamps.....	5 00	
	Dunscombe & Co.....	3 60	
	Office rent.....	25 00	
May	10—Postal cards.....	10 00	
	20—Stamps.....	10 00	
	Telegraphing.....	1 05	
	Office rent.....	25 00	
June	22—Traveling expenses of Secretary.....	17 50	
	29—Hotel expenses, eight days.....	40 50	
	Stamps.....	10 00	
	Postal cards.....	5 00	
	Office rent.....	25 00	
	E. W. Maslin, legal services.....	100 00	
Total.....		\$1,249 65	
Balance.....		35	
Total...		\$1,250 00	\$1,250 00

STATEMENT

Of the Expenses of the State Board of Health for Thirty-ninth Fiscal Year, ending June 30, 1888.

1887.		
Appropriation		\$1,250 00
July 1—Post Office rent	\$2 00	
15—Traveling expenses of Dr. H. S. Orme	50 00	
Traveling expenses of Dr. H. C. Crowder	10 00	
Traveling expenses of Dr. J. M. Briceland	25 00	
Telegraphing	1 55	
Office rent	25 00	
29—Annals Hygiene	2 00	
Aug. 8—Stamps	10 00	
Telegraphing	1 50	
31—Office rent	25 00	
Sept. 8—Stamps	10 00	
28—Traveling and hotel expenses	10 00	
30—Stamps	5 00	
Telegraphing, monthly bill	3 85	
Postal cards	5 00	
Post Office rent	2 00	
Office rent	25 00	
Oct. 14—Expressage Sanitary News	2 75	
Conference State Board of Health	5 00	
18—Sanitary Record	2 50	
Telegraphing bill	5 30	
Traveling expenses of Dr. H. S. Orme	60 00	
Traveling expenses of Dr. H. C. Crowder	10 10	
Traveling expenses of Dr. J. M. Briceland	23 50	
Traveling expenses of Dr. Jas. Simpson	14 00	
Traveling expenses of Dr. R. B. Cole	13 00	
Office rent	25 00	
Nov. 7—Stamps and postal cards	10 00	
Official seal	10 00	
8—Telegraphing	89	
30—Stamps	15 00	
31—Office rent	25 00	
Dec. 13—Traveling expenses, Truckee, etc.	16 20	
Post Office rent	2 00	
Telegraph bill	6 97	
Office rent	25 00	

FINANCIAL STATEMENT—Continued.

1888.			
Jan.	12—Stamps	\$10 00	
	Traveling expenses of Dr. Briceland	25 50	
	Traveling expenses of Dr. C. A. Ruggles	8 40	
	Traveling expenses of Dr. H. C. Crowder	13 50	
	Traveling expenses of Dr. R. B. Cole	15 00	
	Traveling expenses of Dr. H. S. Orme	50 00	
15	American Public Health Association	5 00	
25	Postage stamps	20 00	
27	Postal cards	20 00	
31	Office rent	25 00	
Feb.	3—Express charges on smallpox circulars	19 15	
	Postal wrappers	4 20	
	Sanitarian	4 00	
	Express charges on Conference State Boards of Health	4 80	
12	Stamps	10 00	
	Two hundred reports of National Conference	7 00	
	Office rent	25 00	
Mar.	12—Vaccination Vindicated	2 00	
13	Traveling expenses to San Francisco	10 00	
12	Expenses to Calaveras County	27 70	
	Expressage on circulars	4 06	
	Stamps	5 00	
	Post Office box	2 00	
30	Expenses to Watsonville and return	13 50	
	Office rent	25 00	
April	17—Traveling expenses of Dr. H. S. Orme	70 65	
	Traveling expenses of Dr. Briceland	31 30	
	Traveling expenses of Dr. C. A. Ruggles	26 40	
	Traveling expenses of Dr. G. G. Tyrrell	27 00	
30	Stamps	10 00	
	Telegraphy	4 13	
	Office rent	25 00	
May	20—Stamps	10 00	
	Telegraph and express charges	2 21	
	Office rent	25 00	
June	12—Expenses to San Francisco	11 00	
20	Expenses to San Francisco and return	8 50	
25	Postage stamps	10 00	
	Telegraph	65	
	Post Office rent	2 00	
31	Office rent	25 00	
Total		\$1,123 76	
Balance		126 24	
Total		\$1,250 00	\$1,250 00

*Expenses of State Board of Health on Account of Contagious and Infectious Diseases for
Thirty-eighth and Thirty-ninth Fiscal Years, 1887-8.*

1887.			
Appropriation			\$10,000 00
Mar. 12—	Traveling expenses of the State Board to Los Angeles, San Diego, etc.	\$432 00	
	Salary of Dr. H. J. Borde, Quarantine Officer, Tulare	44 35	
	Salary of Dr. M. J. Rowley, Quarantine Officer, Mojave	56 15	
	Salary of Dr. James J. Choate, Quarantine Officer, Colton	57 10	
	Salary of Dr. C. B. Brierly, Quarantine Officer, Barstow	57 10	
	Salary of Dr. W. A. Weldon, Quarantine Officer, San Pedro	25 00	
	Salary of Dr. J. H. Magee, Quarantine Officer, San Diego	8 25	
30—	Vaccine virus for Inspectors	30 20	
April 30—	Salary one month, Dr. H. J. Borde	125 00	
	Salary one month, Dr. M. J. Rowley	125 00	
	Salary one month, Dr. J. J. Choate	125 00	
	Salary one month, Dr. C. B. Brierly	125 00	
	Salary one month, Dr. W. A. Weldon	50 00	
	Salary one month, Dr. T. H. Magee	25 00	
	Telegraphing to officers, etc.	7 74	
1888.			
Jan. 1—	Telegraphy	9 52	
Feb. 1—	Salary of Dr. S. P. B. Knox, Inspector, Santa Barbara	50 00	
	Salary of Dr. Taggart, Inspector, Tulare	63 30	
Jan. 7 to 14—	Salary of Dr. Wyman, Inspector, Tulare	20 00	
	Vaccine virus to January 31	111 00	
	Salary of Dr. T. A. Davis, San Diego	13 35	
	Salary of Dr. W. A. Weldon, San Pedro	60 00	
	Telegraphy, Dr. Orme, Los Angeles	4 70	
	Vaccine to Dr. Davis	6 00	
Feb. 1—	Telegraphy bill	5 83	
	Kirk, Geary & Co., vaccine	27 00	
	Salary of Dr. Taggart, Tulare	100 00	
	Salary of Dr. W. A. Weldon, San Pedro	100 00	
	Salary of Dr. T. A. Davis, San Diego	100 00	
	Salary of Dr. S. P. B. Knox, Santa Barbara	100 00	
Mar. 1—	Telegraph bill	4 46	
	Vaccine virus	17 00	
	Traveling expenses of Dr. Orme	43 00	
May 1—	Traveling expenses of Dr. Orme to Conference of Boards of Health	377 15	
Total		\$2,506 10	
Balance		7,493 90	
Total		\$10,000 00	\$10,000 00

NAMES AND RESIDENCES OF CORRESPONDENTS

Of the State Board of Health for the years 1887 and 1888.

DR. J. E. S. BAKER.....	Angels Camp, Calaveras County.
DR. S. C. GIBSON.....	Anderson, Shasta County.
DR. R. F. ROONEY.....	Auburn, Placer County.
DR. SAMUEL McCURDY.....	Azusa, Los Angeles County.
DR. J. T. McLANE.....	Alameda, Alameda County.
DR. T. H. MAYON*.....	Amador City, Amador County.
DR. ALBERT FOUCH.....	Anderson, Shasta County.
DR. J. H. BULLARD.....	Anaheim, Los Angeles County.
DR. J. M. VANCE*.....	America, Santa Clara County.
DR. J. M. FORREST.....	Alturas, Modoc County.
DR. C. A. ROGERS.....	Bakersfield, Kern County.
DR. EDWARD GRAY.....	Benicia, Solano County.
DR. F. H. PAYNE.....	Berkeley, Alameda County.
DRS. O. C. HAWKINS and W. R. CLEVELAND.....	Biggs, Butte County.
DR. DAVID WALKER.....	Bodie, Mono County.
DR. A. H. RHEA.....	Calico, San Bernardino County.
DRS. C. C. MASON and W. KING.....	Chico, Butte County.
DR. M. F. PRICE.....	Colton, San Bernardino County.
DR. C. H. GIBBONS.....	College City, Colusa County.
DR. J. O. SMITH.....	Cottonwood, Shasta County.
DR. J. PARKER.....	Castroville, Monterey County.
DRS. W. A. PATTERSON and B. WOODBRIDGE.....	Cedarville, Modoc County.
DR. R. S. MARKELL.....	Cloverdale, Sonoma County.
DR. A. M. GARDNER.....	Calistoga, Napa County.
DR. H. N. MINOR.....	Colfax, Placer County.
DR. E. J. R. DE TURBEVILLE*.....	Camptown, Yuba County.
DR. A. TRAFTON.....	Dixon, Solano County.
DR. ALEMBY JUMP.....	Downieville, Sierra County.
DR. W. A. BROWN.....	Downie, Los Angeles County.
DRS. A. C. COLLINS and W. E. BATES.....	Davisville, Yolo County.
DR. E. W. BATHURST.....	Etna Mills, Siskiyou County.
DR. J. A. MCKEE.....	Elk Grove, Sacramento County.
DR. H. R. BULSON.....	Eureka, Humboldt County.
DR. T. S. ELLIS.....	Elsinore, San Diego County.
DR. PAUL REUDY.....	Forest Hill, Placer County.
DR. G. M. KOBER, U. S. A.....	Fort Bidwell, Modoc County.
DR. F. DURANT.....	Folsom, Sacramento County.
DRS. A. J. PEDLAR and LEWIS LEACH.....	Fresno, Fresno County.
DR. M. M. ROWLEY.....	Fall River, Shasta County.
DR. T. V. GOODSPEED.....	Galt, Sacramento County.
DR. W. C. JONES.....	Grass Valley, Nevada County.
DR. C. A. E. HERTEL.....	Gonzales, Monterey County.
DR. J. R. TODD.....	Gridley, Butte County.
DR. J. G. COOPER.....	Haywards, Alameda County.
DR. H. V. ARMISTEAD.....	Hills Ferry, Stanislaus County.
DR. J. A. DAVIDSON.....	Hanford, Tulare County.
DR. N. B. COFFMAN.....	Healdsburg, Sonoma County.
DR. E. G. CAMPLIN.....	Hollister, San Benito County.
DR. H. G. PIKE.....	Hopland, Lake County.
DR. H. SCHAFER.....	Igo, Shasta County.
DR. A. L. ADAMS.....	Ione, Amador County.
DR. J. N. M. MCGOWAN.....	Jolon, Monterey County.
DR. E. B. ROBERTSON.....	Jackson, Amador County.
DR. J. H. LOWE.....	Knights Ferry, Stanislaus County.
DR. W. S. TAYLOR.....	Livermore, Alameda County.
DRS. M. HAGAN and J. M. REESE.....	Los Angeles, Los Angeles County.
DR. J. FLINT.....	Lincoln, Placer County.
DRS. D. W. WHITE and L. CARPENTER.....	Lakeport, Lake County.
DR. L. M. LOVEFACE.....	Lemoore, Tulare County.
DR. F. W. COLMAN.....	Lodi, San Joaquin County.

DR. F. W. KNOWLES.....	Los Gatos, Santa Clara County.
DR. E. N. FOOTE.....	Lockeford, San Joaquin County.
DR. W. A. CRAIG.....	Lower Lake, Lake County.
DR. DAVID POWELL.....	Marysville, Yuba County.
DR. E. S. O'BRIEN.....	Merced, Merced County.
DR. E. V. JACOBS.....	Meridian, Sutter County.
DR. T. J. STEWART.....	Monrovia, Los Angeles County.
DR. J. N. CRAIG.....	Millville, Shasta County.
DR. C. W. EVANS.....	Modesto, Stanislaus County.
DR. F. R. BROWN.....	Madera, Fresno County.
DR. W. J. KEARNEY.....	Mariposa, Mariposa County.
DR. W. E. ROBE.....	Maxwell, Colusa County.
DRS. A. WESTFALL and J. HOOD.....	Monterey, Monterey County.
DR. M. B. POND.....	Napa, Napa County.
DRS. H. S. WELCH and C. D. BOBO.....	Nevada City, Nevada County.
DR. M. SCHNABEL.....	Newcastle, Placer County.
DR. F. H. HUTCHINS.....	North Bloomfield, Nevada County.
DRS. Z. T. MAGILL and F. M. STRATTON.....	Nicolaus, Sutter County.
DRS. E. W. BUCK and D. D. CROWLEY.....	Oakland, Alameda County.
DR. J. H. M. KARSNER.....	Oroville, Butte County.
DR. E. CHAFFEY.....	Ontario, San Bernardino County.
DR. L. H. PATTY.....	Petaluma, Sonoma County.
DR. W. L. McALLISTER.....	Pasadena, Los Angeles County.
DR. J. Q. WRENN.....	Placerville, El Dorado County.
DRS. A. C. SMITH and W. A. NORMAN.....	Plymouth, Amador County.
DRS. R. T. BURR and DE WITT CRANK.....	Pomona, Los Angeles County.
DR. G. T. MASON.....	Redwood City, San Mateo County.
DR. H. E. STAFFORD.....	Rocklin, Placer County.
DR. JOHN FIFE.....	Red Bluff, Tehama County.
DRS. J. ALLEN and C. C. SHERMAN.....	Riverside, San Bernardino County.
DR. JACKMAN.....	Roseville, Placer County.
DR. H. L. NICHOLS.....	Sacramento, Sacramento County.
DRS. J. L. MEARES* and D. E. BARGER.....	San Francisco, San Francisco County.
DRS. T. L. MAGEE and D. GOCHENAUER.....	San Diego, San Diego County.
DR. E. F. WINCHESTER.....	Santa Barbara, Santa Barbara County.
DR. E. H. GOULD.....	Sonora, Tuolumne County.
DR. W. A. WELDON.....	San Pedro, Los Angeles County.
DR. C. L. ANDERSON.....	Santa Cruz, Santa Cruz County.
DRS. W. S. THORNE and F. K. SAXE.....	San José, Santa Clara County.
DR. R. P. SMITH, JR.....	Santa Rosa, Sonoma County.
DR. D. H. KETCHAM*.....	Santa Maria, Santa Barbara County.
DR. J. R. TULLY.....	Sierra City, Sierra County.
DR. W. J. G. DAWSON.....	St. Helena, Napa County.
DR. G. W. SEIFERT.....	Santa Clara, Santa Clara County.
DR. J. M. BRICELAND.....	Shasta, Shasta County.
DR. T. R. GOODSPEED.....	San Mateo, San Mateo County.
DR. A. MILLIKEN.....	Susanville, Lassen County.
DR. H. J. CRUMPTON.....	Saucelito, Marin County.
DR. J. M. LACY.....	Santa Ana, Santa Barbara County.
DR. E. E. BROWN.....	Selma, Fresno County.
DR. MAY GYDISON.....	Salinas City, Monterey County.
DR. A. C. COLLINS.....	San Bernardino, San Bernardino County.
DR. W. W. HAYES.....	San Luis Obispo, San Luis Obispo County.
DR. A. T. HUDSON.....	Stockton, San Joaquin County.
DR. W. CURLESS.....	Truckee, Nevada County.
DR. PERRY.....	Tehachapi, Kern County.
DR. A. C. WINN.....	Tomales, Marin County.
DR. J. L. HOWELL.....	Tulare, Tulare County.
DR. H. P. TARTAR.....	Tehama, Tehama County.
DR. R. G. REYNOLDS.....	Upper Lake, Lake County.
DR. W. A. KING.....	Ukiah, Mendocino County.
DR. W. F. LYNCH.....	Volcano, Amador County.
DR. W. D. ANDERSON.....	Vallejo, Solano County.
DR. T. W. PENDERGRASS.....	Visalia, Tulare County.
DR. A. J. COMSTOCK.....	Ventura, Ventura County.
DR. J. C. MONTAGUE.....	Weaverville, Trinity County.
DR. W. D. RODGERS.....	Watsonville, Santa Cruz County.
DR. THOS. ROSS.....	Woodland, Yolo County.
DR. A. W. KIMBALL.....	Williams, Colusa County.
DR. L. MELTON.....	Wheatland, Yuba County.
DR. D. N. MASON.....	Willits, Mendocino County.
DR. C. L. GREGORY.....	Yreka, Siskiyou County.

* Deceased.

REPORT OF DEATHS

From June 30, 1886, to June 30, 1887, of those Dying in the State of California.

CAUSES OF DEATH.	SEXES.		AGES.							VARIETIES.				
	Male	Female	Unascertained	Under 1 year	1 and under 5 years	5 and under 10 years	10 and under 20 years	20 and under 30 years	30 and under 40 years	40 and under 50 years	50 and under 60 years	60 and under 100 years	Unascertained	Pacific States
I.—ZYMOTIC OR EPIDEMIC.														
Cholera	9	3	1	136	37	3	21	1	1	21	1	4	1	1
Cholera morbus	216	92	32	46	23	3	1	4	8	6	39	11	4	4
Cholera infantum	118	50	29	2	23	21	21	4	1	1	13	1	4	4
Dysentery and Diarrhoea	18	10	3	9	3	3	1	1	1	1	3	1	3	3
Smallpox	34	18	3	9	17	1	1	1	1	1	4	1	4	4
Measles	60	28	6	5	31	8	8	1	1	1	6	1	6	6
Scarlatina	376	179	18	15	164	124	44	10	1	4	13	1	13	13
Diphtheria	164	79	13	13	100	33	7	1	1	1	11	1	11	11
Croup	64	31	10	36	21	1	1	1	1	1	6	1	6	6
Whooping cough	26	16	8	6	21	1	1	1	1	1	3	1	3	3
Erysipelas	21	9	2	1	21	1	1	1	1	1	1	1	1	1
Fever—Typho-malarial	289	132	32	4	14	24	25	4	3	25	15	24	32	11
Typhoid	43	23	4	3	7	1	4	1	6	1	7	4	4	4
Remittent and Intermittent	92	43	13	29	19	8	6	1	5	3	3	4	11	16
Cerebro-spinal	26	14	12	10	1	1	1	9	1	1	1	1	1	9
Syphilis	76	22	14	1	1	1	1	6	12	24	28	18	24	6
Alcoholism (direct or remote), including delirium tremens	112	27	14	25	24	2	212	1	3	8	8	3	5	13
II.—CONSTITUTIONAL DISEASES.														
Hydrocephalus	62	30	5	25	24	2	212	1	3	8	8	3	5	13
Meningitis	224	115	25	60	75	14	12	9	9	258	153	102	23	169
Phthisis pulmonalis	1,617	910	190	9	12	5	116	416	294	258	153	102	218	309
Marasmus	353	167	34	510	20	3	212	11	14	13	12	32	36	189
Scrofula	10	4	1	1	3	1	212	21	1	1	1	1	1	5
Rheumatism	33	15	2	1	1	1	1	5	2	21	9	14	1	7

Cancer	300	119	154	27	-----	2	1	3	15	24	71	64	84	36	21	78	107	34
III.—LOCAL DISEASES.																		
Pneumonia	611	338	216	57	69	59	10	18	52	70	72	65	97*	99	191	128	214	78
Pleurisy	21	14	7	7	-----	-----	-----	-----	4	2	7	4	4	-----	-----	6	15	-----
Bronchitis	186	87	85	14	57	32	10	3	6	7	10	12	30	19	90	21	59	16
Other diseases of respiratory organs	124	70	44	10	24	10	5	1	12	15	15	13	15	14	43	28	33	14
Enteritis	162	89	66	7	87	18	3	5	8	10	7	8	7	9	106	16	31	9
Gastritis	74	27	41	6	17	5	-----	1	4	6	7	14	14	6	27	10	29	8
Gastro-enteritis	7	5	1	1	3	2	-----	-----	-----	-----	1	-----	-----	1	6	1	-----	-----
Peritonitis (non-puerperal)	115	46	62	7	10	6	2	9	23	17	23	10	8	7	36	27	43	9
Diseases of the liver	125	70	50	5	10	1	-----	2	11	7	22	36	33	3	14	32	72	7
Other diseases of stomach and bowels	63	27	25	11	6	4	2	2	7	2	8	4	19	9	19	16	22	6
Bright's disease and nephritis	165	96	57	12	3	2	3	9	19	17	35	32	31	14	23	37	79	26
Aneurism	39	24	8	7	-----	-----	-----	-----	3	1	14	8	5	7	1	11	20	7
Heart diseases	566	307	204	55	9	5	10	20	51	47	93	100	159	72	61	169	253	83
Convulsions	195	108	77	10	133	45	2	2	3	-----	1	-----	1	7	185	2	5	3
Other diseases of brain and nervous system	190	107	64	19	19	15	3	9	10	12	30	29	43	20	48	48	69	25
IV.—DEVELOPMENTAL DISEASES.																		
Puerperal diseases	33	-----	33	-----	-----	-----	-----	1	15	9	3	-----	1	4	6	9	12	6
Old age	193	78	98	17	-----	-----	-----	-----	-----	-----	-----	-----	193	-----	1	53	99	40
V.—EXTERNAL CAUSES.																		
Suicide	122	99	15	8	-----	-----	-----	2	12	30	31	21	8	18	7	23	66	26
Heat, death from—sunstroke	2	2	-----	-----	-----	-----	-----	1	-----	-----	1	-----	-----	-----	-----	-----	2	-----
All other causes not classified	2,702	1,600	768	274	303	105	44	83	216	299	332	258	412	650	655	469	1,098	480
Stillbirths	357	193	138	23	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	357	-----	-----	-----
Totals	10,316	5,667	3,641	1,008	1,369	885	327	439	1,065	970	1,138	930	1,387	1,445	3,729	1,975	3,326	1,286

REPORT OF DEATHS

From June 30, 1887, to June 30, 1888, of those Dying in the State of California.

CAUSE OF DEATH.	SEXES.			AGES.								NATIVITIES.					
	Male	Female	Unascertained	Under 1 year	1 and under 5 years	5 and under 10 years	10 and under 20 years	20 and under 30 years	30 and under 40 years	40 and under 50 years	50 and under 60 years	60 and under 100 years	Unascertained	Pacific States	Atlantic States	Foreign Countries	Unascertained
I.—ZYMOTIC OR EPIDEMIC.																	
Cholera	27	16	1	3	2	2	2			5	1	12	214	12	3	12	
Cholera morbus	253	135	17	209	32	1	1					23	237	237	8	5	1
Cholera infantum	132	75	9	41	24	5	1	7	5	10	6	23	10	71	25	30	6
Diarrhea and Dysentery	94	66	27	1	5	3	9	26	16	7	13	5	4	20	31	34	9
Smallpox	139	59	66	11	63	11	4	4	4			1	8	114	20	4	1
Measles	59	28	25	5	16	24	8	2					4	40	11	3	5
Scarlatina	358	174	163	14	172	93	35	5	2	1			36	283	49	15	11
Diphtheria	203	106	85	21	115	47	9	1		2			5	182	13	1	7
Croup	4	3	1	3	1	1								4			
Influenza	42	22	18	20	20	1	1	6	6	3	2	8	1	16	13	9	3
Whooping cough	41	26	13	2	10	1	2	7	5	2		3	3	17	9	2	1
Erysipelas	29	12	13	4	2	6	2	115	42	30	10	14	31	165	109	110	30
Fever—Typho-malarial	414	242	156	16	1	37	94	8	13	9	8	13	3	29	26	20	5
Typhoid	80	43	34	3	6	3	8	14	4	3		3	5	107	15	13	9
Remittent and Intermittent	144	68	67	9	47	17	13	4	3	3			4	18	1	9	
Cerebro-spinal	28	14	14	14	38												
Syphilis																	
Alcoholism (direct or remote), including delirium tremens	148	113	26			1		10	26	32	41	21	17	23	41	73	11
II.—CONSTITUTIONAL DISEASES.																	
Hydrocephalus	24	12	10	2	6	1	1							23		1	
Meningitis	289	158	121	10	79	115	23	11	12	8	8	6	7	214	40	26	9
Phthisis pulmonalis	1,832	1,138	592	102	8	28	8	506	411	299	152	126	182	355	583	782	112
Marasmus	333	203	128	2	229	16	4	3	6	9	5	26	1	238	33	34	28
Scrofula	9	4	1	2	4		1	1	1				1	7		1	1
Rheumatism	92	15	7	1		2	2	2	3	5	1	6		2	8	12	

Cancer.	317	151	160	6	11	25	79	77	107	18	24	108	167	18
III.—LOCAL DISEASES.														
Pneumonia	1,039	625	373	41	96	88	127	113	153	57	391	234	381	33
Pleurisy	26	15	9	2	2	6	2	2	7	1	9	6	10	1
Bronchitis	262	131	121	10	6	11	20	21	36	10	132	42	81	7
Other diseases of respiratory organs.	138	85	48	5	9	7	17	19	19	6	59	29	41	9
Enteritis	217	113	104	124	7	14	8	6	17	155	18	41	31	3
Gastritis	86	37	46	3	5	3	11	10	19	4	32	20	31	3
Gastro-enteritis	33	18	15	11	2	4	1	1	6	1	16	5	8	4
Peritonitis (non-puerperal)	124	56	68	4	25	22	13	12	20	4	34	31	56	3
Diseases of the liver	190	142	45	3	18	24	48	45	41	1	16	57	106	11
Other diseases of stomach and bowels.	84	53	27	4	4	10	4	16	14	2	32	18	32	2
Bright's disease and nephritis.	221	145	71	5	30	24	51	44	51	2	27	67	115	12
Aneurism	33	30	3	5	9	7	14	7	5	58	101	194	369	30
Heart diseases	694	423	234	37	59	74	113	119	202	2	215	16	21	6
Convulsions	237	137	99	1	1	2	2	1	3	2	2	79	81	29
Other diseases of brain and nervous system	243	142	90	11	13	21	40	27	65	7	63	79	81	29
IV.—DEVELOPMENTAL DISEASES.														
Puerperal diseases	43	—	43	—	8	21	4	1	1	1	15	13	10	5
Old age	186	93	85	8	—	—	—	—	186	—	20	64	81	21
V.—EXTERNAL CAUSES.														
Suicide	136	116	18	2	9	36	31	13	16	11	18	43	68	7
Heat, death from—sunstroke	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All other causes not classified.	2,980	1,896	925	159	108	296	418	257	550	569	856	812	1,078	234
Stillbirths.	329	57	39	233	53	—	—	—	—	—	326	—	—	3
Totals	12,322	8,197	3,350	773	1,750	1,257	439	606	1,405	1,209	1,419	1,035	1,785	682



TABLE No. 1.

Number of Deaths, arranged according to Sexes, Months, and Ages, from June 30, 1886, to June 30, 1887.



TABLE No. 4.

Number of Deaths from all Diseases, with the Sexes, Months, Ages, and Natirities, from June 30, 1887, to June 30, 1888.

DISEASE.	SEXES.			MONTHS.												AGES.										NATIRITIES.										
	Total.	Male.	Female.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Under 1 year.	1 to 3 years.	3 to 10 years.	10 to 20 years.	20 to 30 years.	30 to 40 years.	40 to 50 years.	50 to 60 years.	60 to 70 years.	Under 10 years.	Between 10 and 20 years.	Between 20 and 30 years.	Between 30 and 40 years.	Between 40 and 50 years.						
I.—ZYMOTIC, OR EPIDEMIC.																																				
Cholera morbus	27	16	10	1	1	2	1	0	2	1	1	2	1	3	3	3	2	2	0	0	0	0	0	5	1	12	2	12	3	12	0	0	0	0		
Cholera infantum	253	135	99	17	34	18	26	51	25	8	5	4	3	7	24	17	26	32	1	1	0	0	0	0	0	7	21	7	27	12	5	0	0	0		
Diarrhea and Dysentery	182	75	48	9	14	10	4	23	19	15	6	8	1	1	7	14	41	24	5	10	6	23	10	7	1	27	7	26	30	4	0	0	0	0		
Smallpox	94	64	27	1	3	1	1	1	1	12	36	13	14	13	6	2	0	0	5	3	9	26	16	7	13	5	4	20	31	34	1	0	0	0		
Measles	139	59	64	11	1	1	1	7	4	18	35	23	25	13	0	2	38	69	11	4	4	0	0	1	8	114	20	4	1	1	0	0	0	0		
Scarlatina	39	28	25	0	1	0	3	2	1	2	3	10	5	0	1	9	9	5	16	24	8	2	0	0	0	4	20	11	1	5	0	0	0	0		
Diphtheria	338	173	163	21	25	20	24	28	38	33	46	38	23	32	3	21	14	172	93	35	5	2	1	0	0	36	243	40	1	15	11	0	0	0		
Croup	203	107	85	12	9	9	14	21	30	32	28	11	17	9	12	8	24	115	47	0	0	1	2	0	0	5	142	13	1	7	0	0	0	0		
Influenza	4	3	1	0	0	0	0	0	4	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0		
Whooping cough	42	22	18	0	0	0	0	1	2	1	4	1	0	0	0	0	29	1	0	0	0	0	0	0	0	1	42	0	0	0	0	0	0	0		
Erysipelas	41	26	13	0	0	1	1	5	5	5	6	12	1	6	8	1	10	9	1	2	6	6	3	2	8	3	10	13	9	3	1	0	0	0		
Fever—Typhomalarial	29	12	13	1	5	5	5	5	1	7	0	3	1	0	2	0	2	6	1	5	2	0	3	1	17	9	2	1	7	0	2	1	0	0		
Typhoid	414	242	136	16	16	31	29	33	57	50	58	23	18	24	29	57	1	40	37	94	115	12	30	10	14	31	165	169	110	30	3	0	0	0	0	
Remittent and Intermittent	80	43	31	4	6	2	5	5	8	9	10	4	0	0	4	7	12	6	3	8	5	13	3	29	24	29	24	20	3	0	0	0	0	0		
Cerebro-spinal	144	68	67	0	10	9	7	17	4	19	6	16	22	14	14	7	6	38	17	13	14	4	3	0	3	5	107	15	13	9	0	0	0	0	0	
Syphilis	28	14	14	0	1	4	0	1	1	3	4	5	3	1	3	2	11	0	0	4	3	3	1	0	4	18	1	9	0	0	0	0	0	0		
Alcoholism	118	113	26	9	6	12	16	12	14	18	24	12	7	12	5	10	0	0	1	9	10	26	32	41	21	17	23	41	73	11	1	0	0	0	0	
II.—CONSTITUTIONAL DISEASES.																																				
Hydrocephalus	24	12	10	0	1	2	1	4	1	0	2	2	3	5	2	16	6	1	1	0	0	0	0	0	0	0	23	0	1	0	0	0	0	0	0	
Monomania	289	158	121	0	2	17	3	13	27	18	37	20	32	37	20	32	70	118	20	23	11	12	8	8	6	214	40	28	0	0	0	0	0	0		
Phthisis pulmonalis	1,832	1,138	592	10	91	104	104	128	157	170	185	167	170	127	174	162	78	28	8	112	566	411	209	132	120	182	355	583	782	112	0	0	0	0	0	
Marasmus	334	203	128	2	31	16	25	41	34	32	36	19	19	14	32	28	229	16	4	3	34	6	9	5	26	1	238	33	34	28	0	0	0	0	0	
Scrofula	0	4	1	0	1	0	1	3	0	0	0	0	0	4	1	0	0	2	4	0	1	0	0	0	0	1	7	0	1	1	0	0	0	0		
Rheumatism	22	15	7	0	3	3	1	2	3	2	1	3	0	1	1	0	2	2	3	5	1	0	0	0	0	0	12	0	1	0	0	0	0	0	0	
Cancer	317	181	160	6	22	25	25	24	33	32	25	29	34	25	29	14	0	0	0	0	11	25	79	77	107	18	24	108	167	18	0	0	0	0	0	
III.—LOCAL DISEASES.																																				
Pneumonia	1,980	625	873	41	84	35	26	58	116	123	192	116	116	88	71	96	125	175	49	56	96	88	127	113	163	67	391	234	381	33	0	0	0	0	0	
Pleurisy	26	15	9	0	2	2	0	3	5	1	3	0	2	3	2	2	1	3	1	1	2	6	2	2	1	7	9	4	10	0	0	0	0	0	0	
Bronchitis	262	131	121	10	8	12	17	11	16	28	45	37	28	25	19	80	65	5	8	6	11	20	21	26	10	132	42	41	7	1	0	0	0	0		
Other diseases of respiratory organs	138	85	48	5	7	6	4	10	22	18	18	6	14	10	13	10	36	15	0	7	9	7	17	19	19	6	59	29	41	9	0	0	0	0	0	
Enteritis	217	113	104	0	18	15	14	21	25	9	19	15	16	15	26	24	121	28	6	4	5	14	8	12	38	155	18	41	3	0	0	0	0	0		
Gastritis	89	37	46	2	2	0	8	9	10	1	6	7	7	5	4	19	11	1	3	6	3	5	11	10	19	4	32	29	4	2	0	0	0	0	0	
Gastroenteritis	33	18	15	0	5	2	5	2	1	0	2	1	1	4	8	11	4	0	3	2	4	1	1	6	1	16	5	8	3	0	0	0	0	0		
Peritonitis (non-puerperal)	121	56	68	0	8	11	8	10	12	7	10	11	15	12	13	7	4	4	6	14	25	22	13	12	20	4	81	31	56	3	0	0	0	0	0	
Diseases of the liver	190	142	15	3	13	12	10	13	14	20	29	18	15	21	13	3	4	2	4	18	24	18	45	0	1	32	18	37	106	11	0	0	0	0	0	
Other diseases of stomach and bowels	124	53	71	1	2	8	2	1	12	7	12	6	3	7	14	22	5	3	3	4	10	4	10	14	2	4	2	18	32	2	0	0	0	0	0	0
Bright's disease, and nephritis	221	115	71	5	10	20	18	11	17	21	19	26	21	18	16	3	5	2	9	30	24	51	44	31	2	27	67	115	12	1	0	0	0	0	0	
Anæmia	33	30	4	0	0	4	6	2	7	1	1	1	1	1	1	0	0	0	0	0	0	7	14	7	5	0	0	11	21	1	0	0	0	0	0	0
Heart-diseases	694	423	274	37	47	48	42	51	62	70	82	18	13	16	17	6	9	10	3	10	34	58	113	110	32	38	100	194	360	30	0	0	0	0	0	0
Convulsions	237	132	89	1	11	11	14	22	16	22	23	17	23	21	30	22	152	66	7	1	2	2	1	2	2	2	215	16	0	0	0	0	0	0	0	
Diseases of brain and nervous system	243	142	96	11	22	10	26	25	18	13	28	24	23	20	9	14	31	27	9	3	13	21	40	27	65	7	63	79	81	20	0	0	0	0	0	
IV.—DEVELOPMENTAL DISEASES.																																				
Puerperal diseases	43	0	43	0	6	2	2	1	1	2	2	13	3	4	1	3	0	0	0	8	21	7	4	1	1	1	15	13	10	5	0	0	0	0	0	
Old age	186	93	85	8	14	8	14	1	14	10	23	23	22	13	17	18	4	0	0	0	0	0	0	0	0	189	0	20	64	81	21	0	0	0	0	
V.—EXTERNAL CAUSES.																																				
Smoke	136	116	4	18	2	10	7	16	9	6	13	14	11	13	16	13	8	0	0	0	9	36	31	20	13	16	11	18	43	68	7	0	0	0	0	0
Heat death from sun-stroke	229	189	93	1	24	26	275	26	240	201	271	293	235	266	262	241	335	121	53	108	296	273	118	267	590	590	826	812	1,074	234	0	0	0	0	0	
All other diseases not classed—died	329	37	79	23	7	5	1	39	30	30	15	32	82	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	12,322	8,107	3,850	748	707	730	817	1,000	1,118	1,173	1,350	1,084	1,164	1,040	1,043	992	1,790	1,257	439	690	1,405	1,260	1,419	1,035	1,785	1,066	4,790	2,605	3,973	234	0	0	0	0	0	



APPENDIX.

The Board of Health, while generally approving the papers presented in this report, are not responsible for the particular sentiments expressed.

BOARD OF HEALTH.

SMALLPOX IN LOS ANGELES IN 1887.

By H. S. ORME, M.D., President State Board of Health.

The beginning of the year 1887, in our beautiful city of Los Angeles, was certainly auspicious. Capital and population were pouring in; new and gigantic enterprises were inaugurated every day; real estate values were increasing at fabulous rates; everything indicated a season of wonderful prosperity. The city was in a good sanitary condition, and as a health resort, especially, was becoming very popular, as was attested by the thousands of invalids who were making their homes in Los Angeles. The appearance of any epidemic disease interfering with this unprecedented prosperity would naturally be very unwelcome. So it is easy to picture the horror of our citizens when it became known that smallpox was in our midst.

The first cases reported to the Health Officer, Dr. J. S. Baker, were on February 16, 1887; J. B., 47 Vine Street, and F. W., 200 Main Street, near Third. Next day, four more cases were reported—Pedro L., corner Main and Seventh; Joe L., Seventh and Spring; F. C., 28 South Spring; and McN., at South Pasadena. Three others were added on the eighteenth—A. H., corner Castelar and Bellevue Avenue; W. P., St. Vincent's Hospital; and J. H., Missouri House, near Southern Pacific depot; and on the nineteenth, still another, José O., 238 Upper Main Street, making, in all, ten cases by the evening of the nineteenth, all of whom were immediately removed to the smallpox hospital, or carefully isolated at their homes. All of these first cases were young men, which fact, taken in connection with their being almost simultaneously affected, would indicate a common source of infection. Investigation since has served to well establish this theory, for it was proved that all these young men were in the habit of frequenting a certain variety theater in this city, where it is supposed that the infection was introduced by the clothing of some visiting Mexicans, smallpox being known to exist in Mexico at that time.

Of the ten cases, the one at South Pasadena died February twentieth, and four more on the twenty-second. As a natural sequence, the city, crowded at the time with thousands of health and pleasure seekers from the East and elsewhere, was on the verge of a panic.

Reports now began to come in of cases in other localities. At the Lugo settlement, nine miles from Los Angeles, three miles this side of Downey Post Office, three cases were reported on the twenty-seventh, one of variola, the others varioloid. These cases were easily traced to the corner of Seventh and Main streets, Los Angeles, whence Pedro L. had been removed to the smallpox hospital.

On the same day, February twenty-seventh, Dr. T. E. Ellis, of Elsinore, San Diego County, telegraphed to me that he had heard of a death from smallpox on the San Jacinto Plains, some twelve miles distant from Elsinore. A few days later Dr. Ellis reported by telegram the cases of two brothers, one only of whom had been vaccinated; the other afterwards died. All these parties had recently visited Los Angeles.

On the tenth of March a little nine-year old daughter of Mr. Andrew

Hay, a resident of the northern part of Los Angeles City, was taken, and died on the fourteenth. Mr. Hay immediately removed with the rest of his family to his ranch in Cahuenga School District, about ten miles from Los Angeles. But the rest of his children, three in number, were smitten with the disease almost simultaneously, and died respectively on the twenty-first, twenty-third, and twenty-seventh of the month. It was at first claimed by the family and their attendants, that these children had measles, and not smallpox, but that, notwithstanding, they were vaccinated and revaccinated, with resultant septicæmia and death. But from all the evidence obtainable, they were undoubtedly genuine cases of smallpox.

At Ravenna, fifty miles north of Los Angeles, on the line of the Southern Pacific Railroad, a case was reported to me, March seventh, through the County Board of Supervisors. I immediately notified Dr. J. S. Turner, of San Fernando, the Health Officer of that district, to investigate. That gentleman reported the case as doubtful, but prudently isolated it. It proved afterwards to be only measles. On the ninth, another case was reported. Dr. Turner at once visited the locality, and found a miner by the name of Beckwith, aged thirty-five, with symptoms of varioloid. Every precaution was taken to isolate the man, and the whole neighborhood was carefully vaccinated. The case developed slowly, and was very obscure from the beginning to the end, but the efficient precautions prevented any cases resulting therefrom. After this patient was discharged, an eruption appeared on his face, and attracted attention on the train as he was leaving the county, and it was thought best to detain him at the hospital for suspects in Los Angeles.

At Port Ballona, Dan. Mahoney, a laborer on the wharf, aged thirty-five, after a spree in Los Angeles, returned to his work, and soon after (March twenty-seventh) developed a virulent case of variola, which caused his death April second.

At Green Meadows, about ten miles southwest of Los Angeles, four cases were reported to me during the month of March, in the McLane family—released April nineteenth.

At the Vernon District, near the eastern city limits, seven cases were reported on the ranch of Diego Lopez, a native Californian. These cases were scattered along through March and April, and the last were discharged May fourteenth.

Santa Monica had one case, reported March fifteenth, by Dr. E. C. Folsom; a child with varioloid.

South Pasadena, in all, reported eight cases, with one death; the first.

At Alhambra, close to South Pasadena, nine cases were reported in the Wallace family; three of variola, the others varioloid.

At Ontario, San Bernardino County, about thirty-five miles from Los Angeles, and on the line of the Southern Pacific Railroad, Dr. Elwood Chaffey reported a case of variola and one of varioloid March fifteenth; and another, April twenty-sixth, at Cucamonga, near Ontario. These cases also were easily traced to Los Angeles.

From San Buenaventura, Dr. R. E. Curran telegraphed March fourteenth the report of one case. "imported from Los Angeles."

At San Diego, Dr. Magee, Health Officer, reports to date, June first, a total of twelve cases, with two deaths. One of these was a little native California boy, aged twelve, named Pedro Garcia, who, with his little sister, aged eight, had been sent from Los Angeles to the Mission School in Old San Diego, hoping to avoid the disease which had already afflicted one member of the family living in another part of the city, but they were both

taken sick and admitted to the smallpox hospital March twenty-third. At this writing, June third, Dr. D. B. Northrup, the present Health Officer, reports that the disease has disappeared from the county, but that he has heard of a few cases at Ensenada, on the peninsula of Lower California.

In this city, up to date, June first, we have had in all one hundred and twenty cases, fifteen of which proved fatal. In the county, outside the city, fifty-six cases were reported, with six deaths. In other counties, twenty cases and four deaths; thus making a total of one hundred and ninety-six cases, with twenty-five deaths.

The mortality, about 12½ per cent, is much less than we usually observe in epidemics of other diseases. A noticeable fact is the general absence of the usual disfiguration, very few cases showing any trace of the disease. From these facts we naturally infer first, a mild form of the disease; second, efficient and faithful treatment by those in charge.

The simultaneous appearance of seven or eight cases of smallpox, some of them being actually picked up on the streets, supplemented by the death of four of them on the same day, was necessarily startling. Exaggerated statements flew from corner to corner, and rumor soon located cases at the various hotels. Wherever a doctor was seen to enter, the inference was, "another case of smallpox." The papers of San Francisco and other places took up the cry, and Los Angeles was declared to be overrun with the plague, before, in reality, a dozen cases existed. Our city was crowded with strangers, and, of course, more or less excitement ensued; and it is estimated that at least ten thousand left the city in one week. On the other hand, there was a disposition on the part of our city press to err as badly in the other extreme. Our daily papers asserted editorially that only a very few sporadic cases existed, that these were very mild, that the disease was under perfect control, that there was no possibility of an epidemic, and no necessity for alarm.

Some of our leading physicians, and others, seemed to recognize the danger at once, and by communications to the press, and to those in authority, did all in their power, not to unnecessarily alarm the public, but to arouse it, before it should be too late, to some organized system of resistance. These worthy efforts were belittled, and the projectors ridiculed. Instead of coöperating, and doing all in their power to throttle the disease in its first visitations, these would-be sanitarians scoffed and sneered. Nothing should interfere with our boom—travel should be unimpeded, passengers should be allowed to circulate with perfect freedom, and the bare thought of a possible quarantine caused a perfect howl of indignation. The result of this was to make people comparatively careless. 'Tis true, that at first the number of cases was comparatively small, and, in fact, in the city never exceeded twenty at any one time. But with prompt and concerted action in the beginning, the disease could have been stamped out at once, and many lives and much expense would have been saved. As it was, a great many of our citizens, influenced by the statements of our city press, underestimated the necessity for stringent measures, opposed and thwarted those who tried to prevent the spread of the disease, and thus, directly and indirectly, were the cause of its being as serious as it was. Cases were actually kept carefully concealed by their friends, because they did not believe in vaccination, and did not wish to submit to the inconveniences of isolation, or the small-pox hospital. Thus the contagion was allowed to spread to others, and many cases are traceable to just such exposure.

In several instances well authenticated cases were under the care of irregulars and quacks, who, from ignorance, or, perhaps, selfish motives, failed to recognize the nature of the disease, and carelessly permitted its dissem-

ination. In a few instances, chiefly in the beginning, cases of varioloid were mistaken for measles and chickenpox, and unnecessary exposures multiplied the foci of contagion. On the other hand, one or two cases of measles and chickenpox, in the excitement of the hour, were mistaken for smallpox, and the unfortunates isolated from friends and relatives, till the error in diagnosis was established. One of our county officials was a notable case in point. One woman, having been treated three years previous for supposed variola, came down from San Francisco, and was permitted to enter the smallpox hospital to nurse her father. She soon developed the disease, and came near dying. I think, in all, fifteen cases or more were carefully concealed from the Health Officer, and not discovered till, in some instances, death or convalescence had taken place.

Dr. W. A. Brown, of Downey Post Office, mentions meeting a tramp who had smallpox unmistakably, but who escaped into the willows before he could be secured, and although he was seen by others afterwards, he was never "corralled." No doubt there were other similar cases.

The last case near Downey is said to have been caused by infected clothing, which a discharged patient from the Los Angeles Hospital had smuggled away with him, although it was supposed that they had been destroyed according to orders. It is also said that the hack used in transporting some of the original cases was, by neglecting disinfection, the instrument of spreading the disease to several later cases.

These cases are cited as instances where, either through neglect or oversight, the employment of proper preventive measures were omitted, and the disease thus permitted to spread.

As soon as it was known that there were cases of smallpox in Los Angeles City, I addressed a *private* circular letter to a number of well known and reliable physicians throughout Southern California and Arizona, notifying them of the existence of the disease, and asking their assistance in discovering its origin, and in limiting its further ravages. I also addressed a communication to the County Board of Supervisors, calling their attention to the necessity of prompt and active measures, and asking that competent persons be appointed as Health Officers in each town or township, whose duty should be to investigate all reported cases, and, as far as possible, prevent any further dissemination of the disease. I give this communication in full:

To the honorable Board of Supervisors, Los Angeles County:

GENTLEMEN: AS a member of the State Board of Health, and as an old citizen and taxpayer, I deem it my duty, in a few words, to call your Board's attention to the presence of smallpox in our city and county, and to inform you that the disease threatens to prove epidemic if it is not speedily "stamped out," either by general vaccination or strict quarantine.

That it must be stamped out no one will deny; when or how soon I wish some one could tell.

So far it has made its appearance (imported from Mexico) in two localities outside of Los Angeles—South Pasadena, and at the Lugo settlement nine miles from the city. A case of varioloid was reported near Anaheim, which puzzled two physicians, and which was very properly promptly quarantined; but, fortunately, it proved to be a severe case of varicella, closely resembling varioloid, and the quarantine was raised.

As soon as the first cases of smallpox in the county were reported, Supervisors Rowan and Macey, acting for the Board, under the law, employed a competent physician at Pasadena to act as Health Officer—to enforce strict quarantine, and to purchase vaccine virus, and to enforce vaccination. Fortunately, owing to the prompt measures and action then taken by your Board, no other cases have been reported from South Pasadena, outside of the family originally infected. The whole district has been, and is now, under close and strict inspection, and it is to be hoped that we will not hear of any more cases in that locality, unless it should make its appearance at San Gabriel among the native Californians, who refuse vaccination.

At Lugo's the disease was carried from this city, from the corner of Seventh and Main

streets. At that settlement we have five cases *reported to date*—one of smallpox proper, the others varioloid.

Dr. J. Turner, of Los Angeles, by order, first went out to inspect these cases, then only three, on Sunday, February twenty-seventh, and again on the twenty-eighth. He quarantined them and put up a yellow flag, etc.; offered and tried to vaccinate all exposed, *but was refused*. Dr. W. A. Brown, of Downey City, has since, by order of Supervisor Venable, been acting as Health Officer in that section, and has, and is now doing, I understand, good work.

This loathsome disease must be arrested, and as quickly as possible, and can only be stamped out by general vaccination, and by prompt and vigorous action on the part of your honorable Board and the city health authorities. So far, some good and satisfactory work has been done, but I am sorry to inform you that the disease, after a lull for about a week, is again on the increase in the city, and it is to be feared will be carried out into the several towns and districts throughout the county.

Such, gentlemen, are the facts. The State Board of Health, apprehending the invasion of the disease, endeavored two years ago to get an appropriation from the Legislature "for a contingent epidemic fund," to be used to prevent the introduction of contagious and infectious diseases into the State, especially this southern section, exposed, as we are, both by rail and sea, on account of our proximity to Mexico. All efforts failed, and again this season an effort was made, and only a few days ago have we succeeded at last in getting one half the appropriation asked for; but it is too late this season to establish quarantine on the line of the Southern Pacific Railroad; the disease is already in our midst. But as sanitarians and Health Officers of the State, I can assure you on behalf of our State Board of Health, that we will do our utmost to assist your Board of Supervisors in stamping out the pest, and would suggest that whatever action your Board may now take, should be prompt and effectual, no half-way measures; competent Health Officers and Health Boards, with full power to act, should be appointed in every town and district in the county. General vaccination and quarantine should be enforced, and then by diligent, continuous watchfulness and care, it is to be hoped that in a reasonable length of time your Health Officers will be able to report a clean bill of health for the whole county.

Perhaps it is needless to say to you that I am in close daily communication, both by mail and by wire, with all parts of our county, as well as the whole State; and as said before, it is only by united, continuous, proper, and prompt action can we hope to soon get rid of this threatened epidemic of smallpox.

All of which is respectfully submitted by—

H. S. ORME, M.D.,
For State Board of Health.

On receipt of this report, the Board immediately requested me to assist in appointing such men as were competent, and a corps of active and intelligent physicians was at once selected, with instructions to ferret out every case, and to provide for its complete isolation and proper treatment. Efficient agents were employed to keep watch, and report all suspects, so that within fifteen minutes after the discovery of a case a competent physician would be in charge. Thus everything possible was done both to carefully attend to patients, and to prevent further spread of the disease. Printed instructions to physicians, with reference to vaccination, treatment, disinfection, etc., and the same to the public, informing them on sanitary matters, were distributed freely among the people. Every effort was made to stamp out the disease at once.

The matter becoming still more serious, as President of the State Board of Health I felt it my duty to call a meeting of the State Board at Los Angeles, to consider the advisability of still more active measures; and Dr. Tyrrell, the Secretary of the Board, with Drs. Cole, Simpson, and Crowder, comprising a majority of the Board, arrived in the city March thirteenth. On the fourteenth, by request of Mayor Workman, a conference was held with the city authorities, and the proper management of the disease, which was rapidly becoming epidemic, was discussed and agreed upon; and at the request of the Mayor, a public meeting was called for the purpose of apprising the people of the danger of the situation, and arriving at some definite plan of action. Universal vaccination from house to house, and the complete isolation of every case as soon as discovered, with thorough disinfection, was recommended. It was also decided to consult the railroad authorities, who readily promised and *gave* their active coöperation in detaining and fumigating infected trains, vaccinating employes, etc.

It was also decided to appoint Medical Inspectors along the lines of travel entering California, whose duty it should be to inspect all trains and vessels, and detain every case of a suspicious nature, vaccinate all passengers exposed, etc.

The State Board then made an official visit to San Diego on the fifteenth, and found they had had one fatal case of smallpox, contracted at El Paso—a lady tourist. Her husband was afterwards taken, and detained at the smallpox hospital. Returning, they visited San Bernardino, interviewing Mr. J. N. Victor, Superintendent of the California Southern Railroad. Thence they went to San Pedro, and back to Los Angeles. Each of these points was carefully inspected, and the railroad, and other authorities, impressed with the importance of active coöperation, which they promised and gave. The following physicians were appointed by the Board as Inspectors: Dr. Thomas L. Magee, at San Diego; Dr. W. A. Weldon, at San Pedro; Drs. J. J. Choate and C. P. Brierly, at Colton; Dr. Q. J. Rowley, at Mojave; Dr. H. J. Bordè, at Tulare City, with Dr. M. F. Price as consultant at Colton. Printed instructions as follows were given these gentlemen by the State Board, and faithfully carried out:

STATE BOARD OF HEALTH.

Instructions to Medical Inspectors for the State Board of Health.

— — —, M.D.:

DEAR SIR: You are hereby appointed Medical Inspector for the State Board of Health for the district between — — —, and the following general rules are published for your guidance:

You will take a convenient position at your assigned station and inspect the emigrant cars on their arrival, at the same time making inquiries of the passengers as to the existence of any sickness on board at the time, or as to there having been any eruptive form of disease among them since leaving — — —. In this investigation valuable information may be obtained from the conductor and other employés of the train.

Should any case of smallpox be discovered upon any car, you will direct said car to be quarantined, or side-tracked, at a point suited to the well being and comfort of the sick, and at the same time adapted to the convenience of the railroad company. It is desired that the work to be done should so be ordered and conducted as to subject the company to the minimum of inconvenience consistent with its energetic and efficient discharge in the interest of public health.

The other passengers on infected cars should be transferred to another car, but not mixed with passengers on uninfected cars. You will examine them carefully to ascertain whether there are any unvaccinated persons among them. All such should be immediately vaccinated, making at least two points of insertion. You will also vaccinate all upon the infected car, and detain them for a period of twelve days from the date of their exposure to the disease.

You will also inspect the express trains, and satisfy yourself that no cases of smallpox were on board. In this examination the conductor and other employés of the cars will be of essential service to you. Should you be satisfied of the presence of smallpox, you will adopt the means just recommended for emigrant cars.

If, upon inquiry, you find that any passenger upon a car has been sick with smallpox during the trip, and has died or been removed from the car, you will consider such car to be infected, and proceed therewith in the manner directed for cars upon which smallpox has actually been discovered.

When any car containing smallpox has been quarantined, you will aid the railroad authorities in seeing that the passengers thereon are well and comfortably cared for, and that the car, after the recovery or removal of the sick, is thoroughly disinfected, according to the rules laid down in the general instructions for disinfection issued by the State Board of Health.

You will be expected to keep a record of cars quarantined, cases of smallpox discovered, and vaccinations and revaccinations performed, and of every other proceeding under the duties assigned you, and to report the same in writing to the Secretary of the State Board of Health at Sacramento at least every third day.

The duties to which you are assigned are important, yet delicate, and the State Board of Health trusts to your discretion and good judgment so that they be exercised with prudence, and with an endeavor to disarm opposition by a courteous and dignified appeal to reason, and the demonstration of the necessity of the measures adopted, rather than by the exhibition of arbitrary authority.

By order of the State Board of Health.

G. G. TYRRELL, M.D.,
Secretary State Board of Health, Sacramento.

Previous to this, arrangements had been made by the city authorities with the Sisters of Charity by which they agreed to assume entire charge of the smallpox hospital, furnishing provisions, cooks, medicines, and everything required, except bedding, fuel, and such male assistants as were necessary; these to be furnished by the city, the Sisters to receive \$3 per day per patient. A similar arrangement had been made with the Sisters during a previous epidemic in 1868, also in 1873. The smallpox hospital was not a popular suburb, and many efforts were made to have it removed to another locality, the residents in the vicinity claiming that several cases occurred in that neighborhood through the proximity of the pesthouse. The difficulty of securing another site for so objectionable an institution, however, caused the removal to be abandoned, and the hospital remains in the same place.

EXPENSES.

The direct expenses to the city and county of this campaign against smallpox, extending over nearly four months of time and a great expanse of territory, were necessarily great. Eighteen thousand dollars is the estimated cost to the city, \$12,000 additional to the county; and indirectly many thousands more must be added to our losses. Physicians were employed at \$10 per day. Nurses exacted very high wages. In fact, nothing could be done in connection with the disease that did not cost a fabulous price. Many cases proved spurious, but the expense of investigation was of course the same. Then the care of cases in families extending over months, at distant points, involved the expenditure frequently of many hundreds of dollars. It was made manifest to our city and county authorities that everybody expected to be well paid for handling smallpox.

In the Ballona case, particularly, there was great demoralization. Nurses were engaged who failed to report, and others employed spent their time in carousing to the utter neglect of their charge, and then demanded \$10 per day for their services.

LESSONS OF THE EPIDEMIC.

There are two important lessons to be learned from our late epidemic. First, that isolation and quarantine, though highly important, are not sufficient in themselves to stamp out the disease; they must be supplemented by vaccination. Second, that vaccination, as it is often performed, is no protection whatever. Thorough vaccination and revaccination is an almost absolute preventive.

Absolute and perfect isolation is generally very difficult. In a crowded city it is well nigh impossible. In an open country it can sometimes be accomplished; but even here the most stringent measures fail to make the quarantine absolute, generally through want of sympathy and coöperation on the part of the family; sometimes in spite of these. As an instance, may be cited the case of Mr. Andrew Hay's hired man, who developed smallpox some time after the death of Mr. Hay's children. The man was very careful not to enter the house at all, and it is supposed he contracted the contagion by fondling a pet dog that had been allowed access to the children.

While in most cases the people recognized the importance of the preventive means adopted by the physicians, instances were too frequent in which violent opposition was encountered by Health Officers, and every effort to vaccinate, fumigate, or isolate was met with open defiance. In one family in particular, a case of variola occurred, and when physicians were sent to vaccinate the rest of the family, and to disinfect the house, they were

violently resisted, and in two weeks others of the family contracted the disease, just through their refusal to take proper precaution.

It is a significant fact, that when cases were promptly reported and taken to the hospital there was no further contagion from that source. But when the cases were allowed to remain at home, it frequently spread to others.

It is a well established fact that vaccination is a preventive of smallpox. Yet there still lingers among many of the native Californians and ignorant classes a prejudice against it. Especially do they object, like the French population of Montreal, to be vaccinated during the prevalence of an epidemic. And even among those who should show more intelligence and better information, we find, now and then, the most bitter hostility to this simple procedure. One of our worst cases was a young man from Massachusetts, whose State laws require every child to be vaccinated before he can enter the public schools. Through prejudice in his family he had never been vaccinated. The folly of their course was probably fully apparent to him before he recovered.

Another instance, in a family who came three years previous from Canada. The mother favored vaccination—the father objected; but on the appearance of the disease in Los Angeles, the children were sent to me to be vaccinated, one of them being quite unwell at the time. Two days later I was called to their house and found the little girl who had been complaining sick with genuine variola. I immediately revaccinated the mother. There was but the one case in the family, which ought surely to convince the father of the utility and necessity of vaccination. This last case, I think, I have traced to their school, where children were in attendance from families in which were concealed cases of smallpox at the time.

With everybody vaccinated, there would be no smallpox, and there should be a law making vaccination compulsory. The medical societies everywhere, voicing the expressions of their individual members, heartily and unanimously favor it. In many States, and in San Francisco and Sacramento, the public schools are open only to those who have been vaccinated, which is a move in the right direction.

Vaccinations frequently fail. In Los Angeles, of thirty thousand vaccinations, at least one third had to be repeated. To this fact much of the prejudice against it may be justly attributed. Cases of smallpox occurring in those who have been vaccinated are often cited by the opponents of the system. These cases are always those in whom the vaccination has been imperfect, or in whom the protection period has lapsed. The act has been performed, but with negative results. The virus, through age, or something else, has no power, and does not "take." Or, in some cases, it takes, but after some years the individual loses his immunity, and should be revaccinated, but is not. Still, because he contracts the disease, he claims that the whole theory of vaccination is wrong, and raises his voice against it.

The experience of the world has proven, unmistakably, that vaccination, properly performed, with good virus, and repeated every seven or eight years, is an absolute protection.

Failures are, unfortunately, too numerous, but should make us only the more careful. We should keep a primary vaccination in sight until we *know* that the work is good. In our late epidemic, the number of revaccinations was very large. The points furnished in some instances seemed absolutely worthless. Why, does not appear. It may be that in transit the points became defective, or possibly were not properly dipped. The points are always carefully packed, and protected from atmospheric influences. Still the fact remains that but few of them were effective.

The advantages to us of a vaccine farm on this coast would be great. Then we could be sure of obtaining fresh material. About a year ago an effort was made to establish a vaccine farm in Southern California, by a very competent man, but he died while making the necessary arrangements, and nothing further has been done. But we understand that the subject is again being agitated, and hope for a practical result.

Our last cases were all among those who refused vaccination. In more than one instance physicians were sent to vaccinate families who resisted, and afterwards suffered for their ignorant prejudice.

Our people need enlightenment in regard to sanitary matters. Much has been done already, but much remains to be done. When thorough vaccination and revaccination are systematically and regularly performed, there will be no material left for this dreadful scourge. Until then we will be subject, every few years, to visitations of this easily avoided pest.

In concluding, it may not be out of place to notice the hostility shown by the press of our city on the occasion of the visit of our State Board of Health. Even the individual members of the Board were attacked in the most shameful manner, and all sorts of improper motives assigned as actuating them in the performance of their duty. They were accused of a desire to quarantine the city through jealousy. Because of our wonderful prosperity these gentlemen were supposed to be enviously trying to injure us. Even though it was apparently forgotten that the members of the Board were honorable gentlemen, it ought to have been remembered that they were officers, sworn to the proper performance of their duty, and that, in the general welfare, they could not be supposed to discriminate in favor of any particular section to the detriment of the whole. It should not be forgotten that the President of the Board was himself an old citizen of the city, and as much alive to its welfare as any editor of any paper in Los Angeles. The members of the State Board worked faithfully for the interests of the whole State, and gave an amount of time and personal attention to the matter for which they will never be adequately recompensed.

TABLE OF CASES.

LOCALITY.	Number Cases.	Number Deaths.
Ballona	1	1
Cahuenga	4	4
Downey	21	None.
Alhambra	9	None.
South Pasadena	8	1
Green Meadows	4	None.
Vernon District	7	None.
Ravenna	1	None.
Santa Monica	1	None.
Total of county, exclusive of city	56	6
Los Angeles City	120	15
San Diego City	12	2
Elsinore	3	2
Ontario	3	None.
San Buenaventura	2	None.
	20	4
Grand total	196	25

SUPPLEMENTAL REPORT.

By H. S. ORME, M.D., President.

The following correspondence occurred in regard to the interests of Southern California as to the smallpox:

BOARD OF TRADE, LOS ANGELES, CAL., }
December 31, 1887. }

T. E. ROWAN, *Esq.*, *Chairman Board of Supervisors, Los Angeles County*:

DEAR SIR: For several weeks past the attention of our people has been called to the dispatches appearing in our papers relative to the rapid spread of smallpox in San Francisco. On the twenty-ninth instant, at a meeting of the Board of Health of that city, the Board passed a resolution declaring the smallpox epidemic, and stringent measures were ordered to fight the disease.

Self preservation is the first law of nature, and the rule applies as well to communities as to individuals. I am directed, therefore, on the part of the Directors of this Board, through its President, Mr. Eugene Germain, to call your attention, and that of your honorable Board, to the existing state of affairs in that city, and to suggest that it would be eminently proper, on the part of the Board of Supervisors, to take immediate action to prevent, as far as practicable, the advent of that dread disease into our city: at least so far as it can be prevented from reaching us from San Francisco over the ordinary routes of travel, viz.: via railroad and steamer.

Quarantine officers stationed at San Pedro and at Tulare, on the Southern Pacific, acting under your authority, would, in our opinion, be the least precaution that our community could take.

I am directed further to suggest that you call a special meeting of your Board, to take immediate action.

Very respectfully yours,

A. M. LAWRENCE, Secretary.

LOS ANGELES, CALIFORNIA, }
December 31, 1887. }

T. E. ROWAN, *Esq.*, *Chairman Board of Supervisors, Los Angeles County*:

DEAR SIR: Your request, made to me at your special meeting held this day, to answer the letter of the Los Angeles Board of Trade of even date, is at hand.

They suggest that the Board of Supervisors take such measures as will prevent the appearance of smallpox in our midst, and in their letter they state: "Quarantine officers stationed at San Pedro and at Tulare on the line of the Southern Pacific, acting under your authority, would in our (their) opinion be the least precaution that our community could take."

Would say in reply, first, that your Board ought to appoint a competent Health Officer both at San Pedro and Newhall, and in fact in every unincorporated town and also township in the county. Tulare is not in this county, hence I mention Newhall.

The State Board of Health will in the future, as in the past, exert itself to the utmost to assist the proper authorities in each and every section of the State to "stamp out" the smallpox and every other contagious and infectious disease which may threaten the people.

From the active and earnest coöperation the State Board of Health received from your Board of Supervisors early in the year, we have no doubt that you can assure the Los Angeles Board of Trade and the citizens of Los Angeles County, that everything possible will be done to speedily eradicate the disease upon its first appearance in this section.

In conclusion, I would state that I have just telegraphed Dr. Tyrrell, Permanent Secretary of the State Board of Health, to call a meeting of the Board at once, when the whole subject-matter of protecting the State from a threatened epidemic of smallpox will receive most careful consideration, and the most effective measures will be speedily adopted.

All of which is respectfully submitted by—

H. S. ORME, M.D.,
President of State Board of Health.

The next case of smallpox reported in Los Angeles was on the eighth day of December, 1887, being a Chinaman, Ah Sin, lately arrived from San Francisco, where the disease was prevalent. He had been sick about eight or ten days in Chinatown when discovered. He was immediately removed to the smallpox hospital, and the surroundings thoroughly disinfected. This case was soon followed by a negro, Tom Worthan, who had

lived near the Chinaman, and from that time until the present (July, 1888) cases have been reported at intervals all over the city.

When the Chinaman was discovered, December 8, 1887, Dr. Hagan was Health Officer, which position he continued to hold until February 16, 1888. Doctors Thompson and Cole were his assistants. After this date Dr. J. W. Reese took charge as City Health Officer. During the incumbency of Dr. Hagan, the State Board of Health was promptly informed upon the appearance and location of every case of smallpox, and the coöperation of the Board sought and cheerfully given in "stamping out" the disease. A tent for free vaccination was erected on the City Hall lot, on Fort Street, where over three thousand persons were vaccinated. As soon as a case of smallpox was reported, it was immediately visited, and if the diagnosis was confirmed, the patient was at once removed to the smallpox hospital. The house where it was found was thoroughly disinfected, and all the inhabitants of the locality vaccinated. Owing to these precautions it is said that during the administration of Dr. Hagan, with the exception of the Chinaman and negro above mentioned, there were no two cases of the disease from the same neighborhood.

The whole number of cases reported by Dr. Hagan to the State Board of Health from December 8, 1887, to February 16, 1888, was twelve, with one case on hand in the hospital, and three convalescent, the day his successor (Dr. J. W. Reese) assumed charge.

About this time, the ground being needed for building purposes, the vaccinating tent was removed, and in various ways an attempt was made to create the impression that the disease had disappeared from our midst. The State Board of Health, whose duty it is to keep informed on such matters, through its President and its Secretary, several times kindly requested of the Health Officer of Los Angeles for information as to the exact number of cases and their location, being willing and anxious to coöperate in suppressing the disease. However, no exact official information has been furnished the State Board of Health, but I was verbally informed about the eleventh of June by the Health Officer, that he had reported to the City Board of Health one hundred and ten cases up to that date. Cases have occurred since. The last case is said to have been discharged from the smallpox hospital on August 22, 1888. To the misfortune of our city, it is easier to suppress information concerning the disease than to exterminate the disease itself.

During the late epidemic very great need was felt for a suitable smallpox hospital, which, indeed, should have been built more than a year ago. Ten or fifteen years since, the present hospital was built just at the close of an epidemic, and thus, to our shame, blunders multiply.

It is undoubtedly a great mistake to erect expensive buildings for this purpose, in which patients are crowded, with many in a ward filling the air with germs of disease and causing to a great extent the terrible sequelæ of blood poisoning that so often follows variola, and causes many deaths. The pavilion plan, or a group of isolated cottages, is the best, as it is airy, disconnected, and affords much better ventilation than the ordinary style of building. At a safe distance there should be a house of detention where doubtful cases could be kept until the diagnosis became certain. During the last season several cases of measles and other exanthemata were mistaken for smallpox, one of which was sent to the pesthouse, where he contracted the genuine disease. A house of detention would have prevented such an unfortunate occurrence.

There should be an ambulance attached to the hospital, and under no circumstances should a patient be removed in a private or public convey-

ance. During the past season at least two cases, one of which ended in death, could, with considerable certainty, be traced to negligence in this respect.

Houses and localities that have been infected in the past should be watched with suspicion; and when it is known that a house is infected, the proper way is to quarantine it with all its inmates, and not, as was the case this year, to close the house against its occupants, thus sending them throughout the city—so many fresh foci of contagion.

The City Health Officer should be obliged to forego private practice and devote all his time to his official duties; and especially ought this to be the case during the prevalence of any epidemic *contagious* disease. *Vaccination, isolation, and disinfection* should be our watchwords; with these *thoroughly enforced* we can bid defiance to smallpox.

The following is a brief resumé of the cases of smallpox which occurred in Southern California during the past season:

Los Angeles City (estimated).....	115 to 125 cases.
San Fernando.....	3 cases.
Whittier.....	8 cases.
Duarte.....	2 cases.
La Ballona.....	2 cases.
Alhambra.....	1 case.
San Pedro.....	1 case.
Pomona.....	1 case.
Santa Barbara.....	1 case.
San Bernardino.....	3 cases.
Riverside (2 deaths).....	8 cases.
Ontario.....	1 case.
San Diego City.....	7 cases.
Moosa Cañon (3 deaths).....	6 cases.

The number of cases, it will be seen, was at least one hundred and sixty-five, of which number about one hundred and twenty-five occurred in the city of Los Angeles; and of the cases occurring in the surrounding country, the infection of the greater number can be traced directly to Los Angeles.

For example, the eight cases at Whittier originated from two cases which were both traced to this city. These cases were under the efficient care of Dr. Q. J. Rowley, of Downey City; and there would no doubt have been fewer cases if the citizens of Whittier had not acted so peculiarly, in persisting for several days that the disease was not smallpox, although experienced physicians had twice confirmed the diagnosis.

At La Ballona the first case reported was on May thirtieth, a native Californian, aged thirty-five, who had contracted the smallpox while on a visit to Los Angeles. Eighteen days afterwards his child, whom they refused to have vaccinated, contracted the disease. These cases were carefully looked after, and no others resulted therefrom. On June nineteenth Maggie Ybarra, aged about thirteen, living at No. 142 Yale street, Los Angeles, was taken to La Ballona, feeling slightly unwell; three days afterwards (June twenty-second) she was brought back to the city and put in the smallpox hospital. Her little brother, aged about nine years, had been left with relatives at No. 442 New High Street, was taken with the disease on June twenty-fifth, and reported to the Health Officer June twenty-eighth, showing the same origin for the two cases.

EXPENSES.

During the former epidemic (1887), there were one hundred and twenty cases of smallpox, which, as has been shown, cost the city \$18,000; and

as there were probably about one hundred and twenty-five cases this year (rumor says more), it is presumed that the expense to the city will be nearly as great. We allude to this item always of interest to the citizen and taxpayer, to show that any epidemic disease is a very expensive luxury, and to still further prove the old, true, trite saying that "Prevention is better than cure."

* * * * *

With his consent, I append the able report of Dr. L. S. Thompson, who had charge of the smallpox hospital (being resident physician) during the last season, and will call particular attention to the cases cited showing the great protective power of vaccination. It is plain to all progressive practitioners that "preventive medicine" will be the medicine of the future, and we who have had the longest and most extensive experience, know that simply because a man is an M.D. he need not necessarily be a sanitarian. Also, we take pleasure in submitting the report of Dr. West Hughes, who, at my request, acted for the Board of Supervisors of Los Angeles County, as Health Officer at San Fernando, and who held the disease in check by his thoughtful and prompt action in the matters of vaccination, isolation, and disinfection.

To the Mayor and members of the Board of Health:

GENTLEMEN: I beg leave to submit to you as briefly as possible this report covering the period of my incumbency as physician in charge of the smallpox hospital. From the beginning until the end of my duties I had under treatment eighty-nine patients, five of whom died, being a fatality of about one in eighteen, or a little less than 6 per cent; making, so far as I can learn, the best record in this country. The result in smallpox hospitals, so far as my knowledge goes—and according to the best authorities—ranges from 15 to 50 per cent. Of the eighty-nine cases, fifty-one (or about 60 per cent) had never been vaccinated; twenty-one had been vaccinated more than twenty years previously; eight more than ten years ago; and one, a German, claimed to have been successfully vaccinated but three months previously—but as he was at the time suffering from oak poison, it is probable that the sore following the abrasion was not vaccinia. Eight were vaccinated after having contracted the disease. So that of the whole number admitted *not one* was, according to the best medical authorities, thoroughly protected; or in other words, there was not a patient stricken by this dread disease that had been vaccinated within the time during which vaccination is believed to thoroughly protect (seven years), and not a death occurred among those that had *ever* been vaccinated even though more than twenty years had elapsed. Two of the five deaths were of the hemorrhagic type of the disease, which is almost necessarily fatal; the remaining three were of the confluent type, which is ever very serious. Sixty were males, and twenty-nine were females. Twenty were under twelve years of age, thirteen between twelve and twenty, and the remaining fifty-six ranged between twenty and forty-six. All of the patients, with the exception of two, were newcomers to our city—having resided here less than a year—which fact speaks in no uncertain manner in favor of the very thorough system of vaccination inaugurated by Dr. Hagan last year and continued during his occupation of the health office.

I feel the importance of bearing with considerable weight upon this subject of protection by vaccination, as seen in fact when this most loathsome malady is met and studied. Theorists are ever ready to rush into print with argument for or against its protective influence, though but few of

them have ever studied it at the bedside, and learned by actual contact the true story, as told by nature. Facts are indisputable, and far more convincing than theories, so I beg leave to cite some that have come to my notice during the past winter; I do so with the more emphasis, for I know that at least two of the deaths were attributable to articles published against the practice early in the season. A Mrs. Mann and a Mrs. Nevils, residing on New High Street, refused to be vaccinated, though all the other residents of the locality (including the little son of Mrs. Mann, and numbering in all thirty) were protected by it. On the twenty-second of February, Mrs. Mann was admitted, and on the twentieth of March Mrs. Nevils became a patient; both were dangerously sick, and only saved by the utmost care and attention, and will be much marked for life; while of all the thirty who were just as much exposed *not one* contracted the disease. The little boy of Mrs. Mann, though he came to the hospital and was continually exposed by mixing with the other patients, escaped without even the slightest attack.

A young man named Heckman was quite intimate with a family by the name of Augustine, when a boy of the family was attacked, though not discovered by the health department until well advanced, having been treated for measles. All the members of the family were at once vaccinated, but Heckman, fearing serious results, secreted himself, and in a few days was taken down with confluent smallpox, and died on the tenth day; while two boys, a girl, and the mother, though contracting the disease, were so protected by the vaccination that all passed through without at any time being dangerously sick: had the protection been received one week sooner, they would probably have escaped entirely.

A little girl named Griniger was admitted March fifteenth, suffering from confluent smallpox. Her three brothers and a sister were immediately vaccinated, but as the disease had (as was afterwards proved) even then made its attack, they were not entirely protected, but though some of them had very grave symptoms at the beginning, the protective influence soon made itself known, and so modified the disease that they all made a rapid and good recovery, while the *unvaccinated* one recovered after a long and painful sickness.

Ada Mills, aged seven, and Tommy Cates, aged three, were vaccinated within a few days of the outbreak, and I do not hesitate to say that they owe the fact that they still live to the fact that they were protected.

It is true that about seventy-five per cent of unvaccinated children die when attacked by variola, while out of eleven received this winter two only died, and *neither of these had ever been vaccinated*. Three of the nurses and myself, though constantly exposed to the contagion in its worst form, escaped entirely, and no doubt owe it to the protection from having been vaccinated. While all the assistants and myself did all in our power to save the lives of those under our care, it would be claiming too much did we credit ourselves entirely with the unusually small death rate, when a great part, and probably the greatest part, was due to the protection from previous though very remote vaccination. I can more than ever feel the great truth, and indorse the remarks of our efficient Health Officer of last year, Dr. Hagan, when he says that this terrible disease would be unknown did every one protect himself by vaccination. I would go further and say that the time should soon come when a person not thus protected should be considered criminally negligent of the lives of the community, and treated accordingly. In a period of twelve years' experience with variola—during which time I have made it a special study—I have never known so small a death rate, and I feel much gratified with the results.

I feel, however, that much is due to the very conscientious assistance rendered me by Mr. and Mrs. Keys and Messrs. Chester and Hickey, who were ever ready by night or day to do what they could to save the lives or alleviate the pains of the many sufferers under our charge. I wish to tender my best thanks to his Honor, the Mayor, for the very solid assistance and encouragement tendered me at all times, and his very kind and thoughtful consideration of both myself and the unfortunate ones under my care, as shown by his daily communications, which were most gratifying to myself and a source of much comfort to the sufferers, who felt that while the executive of the city had such an interest in their welfare nothing needed for their comfort would be denied. I wish, also, to thank the Health Officer, Dr. Reese, for uniform courtesy and consideration, and for his willingness at all times to second any desire and to fill any want for the good of my patients, or for my own comfort—allowing me at all times free exercise of judgment in the treatment and care of the sick. And, finally, I feel that I can say that I have the pleasant knowledge that all the unfortunate ones who have been inmates of the hospital this winter have been satisfied, and all are willing to bear witness that their treatment both by the Board of Health and by the officers of the institution was all that could be desired, and more than was ever expected.

I have the honor to be your obedient servant,

L. S. THOMPSON.

ORIGIN AND PROGRESS OF THE SMALLPOX AT SAN FERNANDO, FEBRUARY AND MARCH, 1888.

There have been two cases of smallpox at San Fernando and one of varioloid. It is impossible to trace the disease to a definite origin. The first patient was a man twenty-four years old. He was taken with the first symptoms while in Los Angeles on February eighth, and the next day returned to San Fernando. He was in Los Angeles only three days. Previous to that time he had not been anywhere near the smallpox for months, but was in daily communication with people from Los Angeles. The disease must, therefore, have been communicated by a third party. At first he was supposed to be suffering from pneumonia; and, owing to the fact that he usually had an acne eruption on his face, the diagnosis of smallpox was not made until February fourteenth. The next day I saw him for the first time. There was a pustular eruption all over the body, and the skin of his face was considerably swollen. Temperature, 103 degrees; pulse, 120. The disease ran an ordinary course without complications, and he was discharged cured on March fifteenth.

The second case of smallpox and the case of varioloid appeared about the same time, February twenty-third. The case of varioloid was the wife of the first patient. She had been vaccinated on February fifteenth, with success. The eruption had entirely disappeared by March fifteenth, and she was discharged with her husband.

The second case of smallpox was a sister of the first patient, nineteen years old, and eight months pregnant. I was called to see her on February twenty-third. She was suffering intense pain in the lower abdominal region, slight pain in the back and hips, and had some headache. Temperature, 102.5 degrees; pulse, 120. In a few hours she gave birth to a child. She had done a hard day's work washing the day before, so it seemed an ordinary case of premature labor. Two days afterwards, March twenty-fifth, the eruption appeared, and the house was immediately quarantined.

With the appearance of the eruption the fever did not subside, but the temperature rose, and for five days varied between 104 degrees and 105 degrees, pulse 120 to 130, during which time she was frequently delirious. The eruption afterwards became confluent, so that her whole face was one mass of pustules. On March fifteenth (the twenty-second day of the disease) she was removed to the house which her brother had vacated the same day. This was for better ventilation, and because the house could be more easily guarded. Her temperature was then 102.5 degrees, pulse 120. The next day her temperature was 100.5 degrees, pulse 80. From that time she improved steadily and was discharged cured on March thirtieth.

MEASURES TAKEN TO PREVENT THE SPREAD OF THE DISEASE.

1. Quarantine and isolation. 2. Vaccination. 3. Disinfection, etc.

1. Quarantine and Isolation.

On February fifteenth, the house was flagged and a guard placed in front of it night and day. On the twenty-fifth of February, the house where the second case appeared was quarantined. It was a hotel and saloon in the same square with the first house. There were sheds and outhouses back of the hotel, so it was necessary to quarantine nearly the whole block. To do this effectively, three day guards and three night guards were necessary. The woman who keeps the hotel is an habitual drinker and unreliable; so the guards were given a shotgun, and instructed to use it if necessary. On March fifteenth, as soon as the patient could be removed, she was carried to the house that had been occupied by her brother (the first patient). A reliable man, who acted as nurse, cook, and guard, accompanied her. Then only one other guard was necessary during the day, and none at night.

2. Vaccination.

Everybody who could be persuaded was vaccinated. On the appearance of the second case, blank forms were printed, and it was given out that vaccination was "compulsory" and free. One hundred and twenty-five people were vaccinated by myself, and a few others procured virus in Los Angeles and were vaccinated without my knowledge. Only a few who had been successfully vaccinated within a year were revaccinated, and none with success. Two families declined to be vaccinated.

[In seventy cases, virus from the Chicago farm was used; in fifty, Alexander's virus, and in five, Rafael (Pacific Coast) virus.]

It has been impossible to ascertain the exact proportion of successes, but it was somewhere between 50 per cent and 75 per cent of all cases. The woman who had varioloid was vaccinated (with success) the day of my arrival. The one who had the severe case of smallpox had not been vaccinated.

3. Disinfection, Etc.

My clothes were changed before and after every visit, hands cleansed with scrub-brush and soap, and face and hands washed in a 5 per cent solution of carbolic acid. As soon as the second case appeared I had a small shanty built, about fifty yards from any other building. It was divided into two compartments, with a separate entrance to each, and a door in the partition between them. In one of the compartments were

kept water, scrub-brush, and soap, and a large jar of 5 per cent solution of carbolic acid; in the other, a suit of clothes, hat, and pair of shoes, which were worn only on visits to smallpox patients.

In the case of the two women, the hair was cut short, so that the head could be thoroughly washed. Every patient had a warm bath daily for several days before being discharged. On the last day a complete change of clothing was placed on the portico outside the house, and the convalescent, after a warm bath, clad in clean clothes, immediately left the premises.

The mattresses (five in number), bedding, and most of the clothing worn by the patients, were burned; all the clothing not burned was boiled for two hours in a 3 per cent solution of sulphate of zinc. A strong solution of copperas was used for dejecta and privies, which were afterwards douched with a one to one thousand solution of bi-chloride of mercury.

The room occupied by the patient in the hotel, and the one adjoining, and all the rooms of the other house, were fumigated with sulphur. Then the floors, ceiling, walls, windows, and bedsteads of every room in both houses were scrubbed with soap and water, and washed with a one to one thousand solution of bi-chloride of mercury. Afterwards all the doors and windows of the hotel were kept open for a week, and instructions given that the other house should be aired in the same way. (I left San Fernando the day after it had been disinfected.)

Respectfully submitted.

WEST HUGHES, M.D.

To H. S. ORME, M.D., President State Board of Health, Los Angeles.

SMALLPOX IN SAN FRANCISCO.

By S. S. HERRICK, M.D.

San Francisco was entirely free of smallpox for a little more than a year, when a case was reported on Jessie Street, February 23, 1887. This was a solitary case and the city continued exempt until May third, when a Chinese passenger from the steamship "City of Sydney" was sent to the Twenty-sixth Street Hospital. It appears that several deaths occurred in the steerage during the voyage from Hongkong, one of which was four days before reaching this port, and was reported by the ship's surgeon as occasioned by purpura hemorrhagica. The case just mentioned as sent to the pesthouse May third, developed eight days after arrival in port, which gives an interval of twelve days from the death of the case of purpura hemorrhagica, and there is strong ground for presuming that the latter was really hemorrhagic smallpox. In any event, it is clear that the present visitation has grown out of infection brought by the "City of Sydney" about the end of April, 1887.

The following is a numerical exhibit of the course of the disease up to the end of June, 1888, derived from the records of the Board of Health:

MONTH.	Total Cases.	Male.	Female.	White.	Mongol.	African.	Deaths.
May, 1887	8	8		3	5		
June, 1887	11	6	5	10	1		2
July, 1887	9	6	3	9			3
August, 1887	6	6		6			1
September, 1887	6	4	2	6			1
October, 1887	6	2	4	5	1		2
November, 1887	33	20	13	31	2		4
December, 1887	86	67	19	79	7		10
January, 1888	224	190	34	193	30	1	27
February, 1888	115	84	31	97	18		9
March, 1888	23	20	3	20	3		4
April, 1888	22	18	4	16	5	1	4
May, 1888	8	5	3	8			2
June, 1888	11	8	3	11			
Totals	568	444	124	494	72	2	69

The vaccination history of those admitted to the pesthouse was not made a subject of systematic inquiry till January 11, 1888. From this date to June thirtieth, two hundred and forty-seven persons, excluding Chinese and school children, were received, of whom one hundred and eighty had been previously vaccinated, and sixty-seven not vaccinated. During the whole period of fourteen months twenty-nine school children were admitted, three of whom had never been vaccinated. Of these twenty-nine three died.

Justice to the San Francisco Board of Health demands the explanation that repeated efforts were made, beginning in the early course of the visitation, to have enforced the rule requiring all public school pupils to be protected by vaccination. The appearance of smallpox among these children indicated that the rule had been relaxed, and inquiry developed the

fact that it was entirely neglected in some of the suburban districts. It was proposed to make an inspection of arms at the school houses, and to vaccinate there or elsewhere all who needed protection; but opposition was made on the ground that the "Board of Health had no right to use a school house for a health office." It would be unfair to say that the school authorities generally were opposed to the enforcement of the vaccination rule; but it would be a suppression of truth not to state that the Superintendent, Mr. James W. Anderson, and Mr. Thos. P. Woodward, a member of the Board of Education, were conspicuous in obstructing the inspection of the school children, by which means alone the Board of Health could be satisfied of the protection of these children.

In the month of February, Drs. Fred. W. Lux and Kate I. Howard were employed by the Board of Health to visit the public schools for the duty above indicated. Eight schools were visited, and two thousand and seven pupils examined; only four refusing to submit to the inspection. Of this number sixty-seven were found totally without visible evidence of vaccination, making $3\frac{1}{3}$ per cent of those examined. Of the remainder it may be presumed that a large proportion were only partially protected, judging from the twenty-nine pupils who were admitted to the pesthouse, only three of whom were entirely without vaccination marks. At this point the examinations terminated, for the reason above stated.

Nevertheless it is probable that the efforts of the Board of Health have not been fruitless, and that few children are now admitted to school without vaccination certificates; but with the disappearance of smallpox, and in the absence of sanitary supervision of the schools, it may be expected that there will be a relapse to the former neglect. It is now to be observed that very many parents postpone the vaccination of their children till the school age, and, recognizing it as a condition of entrance to school, entirely lose sight of its relation to smallpox.

Free vaccination at the health office is constantly provided for the public, and by the month of July the number of applicants so increased that it became necessary to employ a physician for this special work. Soon after other physicians were employed to visit houses in neighborhoods where cases of smallpox had been discovered, and offer gratuitous vaccination. Gradually the health office became so thronged, that two vaccinators were for some time kept hard at work, which continued on evenings and Sundays. The number of gratuitous vaccinations recorded from June 20, 1887, to June 30, 1888, is more than eighty thousand, at an expense of \$7,526 80 for bovine virus, and \$4,230 paid to physicians. This number includes those performed at the health office, at private houses, and at hotels, lodging-houses, factories, workshops, etc., where vaccination was requested for inmates or employes.

It is desirable to know the results of vaccination, both in the interests of the individual vaccinated and for the purpose of determining the value of the virus used. After long experience in this kind of work, I must acknowledge that my efforts to arrive at accuracy in the results have been far from satisfactory. The chief difficulty grows out of the neglect of persons to return and report. This, I presume, is the experience of most practitioners in our country; and, therefore, I regard with some wonder a report of five thousand two hundred and five vaccinations during this visitation by a certain practitioner, of which four thousand seven hundred and eighty-nine were successful, taken in connection with the following statements: "About one third were primary cases. * * * I do not consider the sore limb with swollen glands and severe constitutional disturbances successful vaccination. Nor do I consider the bloody tumor, nævus, or raspberry excrescence,

the thin, yellow, and irregular crust which falls off in eight to twelve days without leaving a foreated and striated cicatrix, a successful inoculation. It is only where I found a circular vesicle with depressed center and circumscribed areola forming in from six to ten days, or an umbilicated striated kine-pock mark, that I passed them and issued a permanent certificate." My own experience in September, 1887, was as follows: Vaccinations performed, one thousand three hundred and thirty-six; reported for verification, four hundred and seventeen. Bovine virus was used from two different establishments: one of which gave one hundred and thirty-five successful results, with fifty-seven failures—all primary vaccinations. The other gave one hundred and sixteen successes and one hundred and nine failures—all primary, also. My record from March 6 to June 30, 1888, gives two hundred and sixteen primary vaccinations: one hundred and thirty-five reported for examination, showing sixty-five successful and seventy failures.

The general results of vaccination by the various physicians employed by the Board of Health were not highly encouraging, and, therefore, the Board was gratified to learn, in January last, that a vaccine farm was in successful operation at San Rafael. Before deciding to use the new product, it was deemed advisable to know something of the management of the establishment, and the present writer was sent on two separate occasions to make an inspection. At the first visit there was opportunity to observe a few calves, a few appliances of the rudest nature, and the inoculation of one animal. It was learned that the virus had been used for a short time, and to a very limited extent, on children at San Rafael, but no record of results had been made. At the next visit the inspector was not allowed to make further observations, in order to guard against any possible rivalry. The inspector was surprised to learn that there could be "trade secrets" in this business when conducted by a member of the medical profession, after observing a vaccine establishment some years ago at New Orleans, which was open to the public without reserve.

None the less, the San Rafael virus was given a fair trial by the Board of Health, but the various public vaccinators reported almost uniform failure, and it was soon abandoned. It is greatly to be regretted that this establishment could not have been brought to a fair pitch of efficiency, as it is the only one upon this coast, and the virus from eastern farms has lately proved more unsatisfactory than ever. In fact, for several months a particular vaccine, which had been highly praised in earlier months, has been found later, in my hands, to give a majority of failures in primary cases.

In the control of smallpox our main reliance is in vaccination. When the disease is absent young children can be vaccinated at convenience and there is little call for secondary vaccinations. In case of failure with children the operation can be repeated in a leisurely way, until successful. But in the face of pestilence sure results are an urgent want—there is no time to repeat uncertain experiments. Especially important is certainty in secondary vaccinations. With a virus liable to fail in 25 to 50 per cent of cases, no one can feel sure of safety as long as failure takes place. Repeated failure may be due to fault of the vaccine rather than protection by previous vaccination, and delay is fraught with danger.

In my judgment it is greatly to be regretted that humanized vaccine has fallen into discredit. Unfortunately there was ground for distrust of this source of supply during a limited period of the past, as there still is upon the Hawaiian Islands, owing to the prevalence there of syphilis. Careful study of the history of vaccinal syphilis in Europe convinces me

that such accidents grow out of culpable carelessness in the selection of vaccinifers, while experiments made with virus taken from children known to be syphilitic were rarely successful, unless there was admixture with their blood. During the late civil war in this country there were numerous occurrences of "spurious vaccination," a portion of which were probably syphilitic in character; others were of the nature of pyemia or septicaemia; while the majority were attributable to the scorbutic condition of the subjects of vaccination. It is certain that the worst results followed vaccinations performed by soldiers on each other, without the slightest care or discrimination in the selection of virus; and it is highly probable that no syphilitic result followed vaccination performed by medical men with vaccine taken from a young child.

Undoubtedly the publication of such accidents has led to greater care in the selection of vaccinifers and prevented, for the last fifteen years, recurrence of vaccinal syphilis. Speaking from personal experience and observation, though previous to 1887 connected mostly with vaccine from human sources, and so far without meeting a case of vaccinal syphilis, my opinion is that danger of this accident is imaginary rather than real, provided due care be taken in selecting lymph from healthy children, never before vaccinated, between the ages of six months and six years, without admixture of blood. With this lymph in primary vaccinations I have not had one failure in more than a year up to the present writing, September twenty-first, nor any irregular results. After failure with the bovine virus, it is my custom to suggest the use of human lymph, and this is often accepted. In primary vaccination, the first trial has been invariably successful.

The lymph used by me is taken from normal vesicles on healthy children seven days after vaccination. Puncture of the vesicle at this stage is followed by the flow of two or three drops of the lymph, which is received on points. Those previously charged with bovine virus are used for this purpose, after washing. As there is almost daily opportunity to renew the supply, the virus is always fresh.

Besides the uncertainty of the bovine virus, there are other features of common occurrences, which are not pleasant and which are not found in the human product. The sores are apt to be quite serious in character; a considerable eruption on the body is liable to take place; and the points of vaccination frequently develop a raspberry-like excrescence (sometimes a true ecchymosis), which may remain for weeks, and is often mistaken by the inexperienced for the normal result of vaccination.

It is claimed that the protection afforded by bovine vaccination is more positive and lasting than that afforded by the Jenerian virus after numerous propagations in human beings. It is true that virus at one or only a few removes from the animal, produces more energetic effects than that obtained after many successive human propagations, and I shall not deny that some deterioration in the protective power of vaccination resulted in the long period which elapsed from the time of Jenner up to the time when animal vaccine began to come in common use in this country. But when it is claimed that the bovine virus gives certain and indelible protection from smallpox, I must dissent. In the April (1888) number of the "Pacific Medical Journal" I gave six instances of smallpox which occurred during the present visitation of the disease in San Francisco after recent and successful vaccination with the bovine virus. But in order to obviate any possible deterioration of humanized vaccine, it is sufficient to recur occasionally to the bovine source of supply.

The conclusion reached by me, after more than twenty years' experience with both kinds of vaccine, is as follows: The danger from human lymph

taken by a careful and experienced vaccinator is imaginary rather than real. The results with this virus are so much more certain and regular, that it should have the preference whenever smallpox is threatened, and always have the preference in secondary vaccinations. It should here be explained that I never use humanized virus without the knowledge and consent of persons old enough to judge for themselves or for those in their care, and that most of my work is done with bovine virus, in deference to popular demand.

On December twenty-ninth the disease had gained such general diffusion over the city, and the cases were so numerous, that the Board of Health felt justified in declaring it epidemic. Subsequent action, declaring the disease no longer epidemic, was taken March sixteenth.

In the early part of January the number of sick at the smallpox hospital exceeded one hundred, and soon after the demand for further accommodations became so pressing that an additional building was hastily erected, so that the capacity was doubled, or equal to the needs of two hundred patients. Before this time the Board had found the monthly fraction of its annual allowance from the city treasury far below its actual wants, and relief was sought and obtained from the Urgent Necessity Fund. The total amount drawn from this fund, expended on account of smallpox solely, was \$40,000, in addition to \$5,000 appropriated for the maintenance of the smallpox hospital. The following were the principal items of expense: Bovine virus, for gratuitous vaccination, \$7,526 80; paid to additional physicians for services in vaccination, and other duties, \$5,673 32; maintenance of smallpox patients, \$20,199 99; cost of a new building, erected in January, as an annex to the pesthouse, \$7,561 37; disinfectants, \$961 60; horse hire, \$1,170 50; paid additional employes, \$4,515 68; total, \$47,609 26. The excess above \$45,000 was made up from the ordinary funds at command of the Board.

To the above amount should be added the value of the lives sacrificed, for every human life has a value as capital for the production of wealth, usually estimated at \$1,000 per capita, and in California this is a low estimate. Here would be \$69,000 more lost.

Besides, the Pacific Mail and the Oriental and Occidental Steamship Companies declare that their extra expenses, due to quarantine, from February 1 to May 1, 1888, were \$75,000 to each company, or \$150,000 to both, in addition to the cost of maintaining Chinese passengers for other periods of ten days, whenever cases of smallpox happened to occur on their ships *in transitu* during the season. It is probable, therefore, that these two companies have suffered damage to the amount of \$200,000 during the period of May 1, 1887, to June 30, 1888. The total loss to the city and to the steamship companies therefore considerably exceeds \$300,000.

Some comments on the foregoing facts may now be appropriate. Theoretically speaking, smallpox is a preventable disease, but not absolutely so in a free country like ours. Its existence is a part of the price of our liberties, but, in the present state of knowledge on the means of prevention, an epidemic of the disease means bad sanitation, and is discreditable to any civilized community. It is a poor excuse to say that San Francisco was not prepared for it. No American city of 300,000 inhabitants, and an assessed value of \$273,000,000, has a right to plead want of preparation to control smallpox. The needed pecuniary means, which are abundant, should be made available *before the enemy has come*; the sanitary knowledge required is the property of the world; suitable persons to put both in operation can be found, if wanted.

The Health Department of San Francisco was organized nearly twenty

years ago, when the population was a little more than one third its present number. During this period it has lost rather than gained strength, for the place of Assistant Health Officer has been abolished. With increasing territory and population the number of Health Inspectors has remained only six. Experience shows that Chinatown and the cheap lodging houses are generally answerable for the introduction of fresh cases of smallpox, and no such sanitary force is adequate to keep them under proper supervision.

The city has a population of nearly three hundred and fifty thousand, and a sanitary force available for outdoor duty of one medical officer and six non-medical inspectors. Systematic inspections are out of question. Nuisances and sickness cannot be sought out and prevented; they can only receive attention when reported by others. As a natural consequence pestilence sooner or later gets the upper hand. This is the event for which no preparation has been made: its cost, the "pound of cure" from neglect of "the ounce of prevention," represented by more than \$100,000, including the value of human lives sacrificed.

The Health Department at all times offers free vaccination to those who visit its office at the New City Hall. Doubtless free vaccination costs less than the expense of a few cases of smallpox, and the preventive measure ought to be made as general as possible. In other words, it is expedient to make it convenient for people to avail themselves of the offer: or, to be more precise, there should be vaccination stations in selected parts of the city's extensive territory. It would be work enough for one medical man to attend six different stations in rotation, for one day in the week at each, besides attendance for the same purpose at the health office every day in the week, including Sundays. The same officer could also inspect the public schools, and prevent a repetition of twenty-nine cases of smallpox among the pupils, with three deaths, according to late experiences. The estimated money value of these three lives would about equal the cost of this service for one year, without counting the cost of maintaining the whole twenty-nine at the pesthouse.

Inasmuch as San Francisco receives occasionally cases of smallpox from the interior country, it is obviously out of the power of sanitation to keep the city constantly free of the disease. As to steamships engaged in the Chinese traffic, it is a different matter. A thorough system of vaccination of the Chinese passengers before sailing would effectually prevent the importation of cases at this port. The effective disinfection of their personal effects after arrival would complete the needed preventive work. But it must be understood that humanized virus is to be used, instead of the commercial bovine article, and it would be the work of a competent medical man to conduct the vaccination of children at Hongkong, so as to provide a sufficient supply when wanted. It is quite within bounds to assert that the two steamship companies might have avoided the repeated introduction of Chinese effects with smallpox during this period, at an expense of \$200,000, by the expenditure of much less than \$10,000, as compensation of a competent sanitarian.

The cost of this visitation of smallpox to San Francisco and to the steamship companies may be regarded as a penalty for violation of sanitary laws; also as the price of a lesson in sanitation. The important question is, whether, in either or both senses, it shall fail of effect in preventing a repetition.

REPORT ON SMALLPOX IN STOCKTON.

By C. A. RUGGLES, M.D., Health Officer.

The first case of smallpox that came to my notice in Stockton was on October 27, 1887—Mr. Geo. H., a clerk, aged twenty-two years. The origin of it I never could satisfactorily ascertain. There were ten other members of the family. The conditions were extremely favorable for perfect isolation. The patient was placed in the upper story of the dwelling. The members of family occupying the lower part of residence were all successfully vaccinated. To the cheerful compliance and hearty cooperation on the part of the family in all quarantine regulations am I much indebted for a successful confining of the disease to that one case. It was of confluent type; was quite severe; but he recovered.

Exemption from the disease lasted but a short time. On January 3, 1888, Miss Nellie G., aged sixteen years, was attacked, and, as in the preceding case, the origin was never ascertained. Her case ran the usual course, and terminated in recovery. Successful isolation was maintained. No other member of the family took the disease.

From this time until May twenty-first there was no period that we did not have one or more cases. In all, there were thirty-one cases—seventeen males, and fourteen females—the oldest, seventy years, the youngest, five months old. There were three fatal cases.

The disease, generally, was of a mild type, a few only being severe. Four of the patients were colored persons, and had it very severely, two of the four terminating fatally, one at the age of seventy years.

A mistake in diagnosis furnished four cases. A mother, believing her son had chickenpox, gave no notice of his illness, thinking herself equal to the task of treating such a slight matter. It did not progress satisfactorily to her and some of her neighbors, and I was called in to verify a case of varioloid in the beginning of the pustular stage. To this case three light and one very severe case were clearly and positively traced, thus confirming the statement that from a very mild case a dangerously severe one may arise.

Seven cases were clearly traced to an importation from Gilroy. One case, in second day of papule, came from that town in cars, from the depot in carriage, and as far as I could ascertain no case arose from it, leaving one to draw the inference that the communicability of the disease is somewhat exaggerated.

As to the time when infection may take place, there is great diversity of opinion. Some authors contend that it may begin even during the period of incubation; some that the period of suppuration is the time of infection; others claim the infecting period is during desiccation, and others say "little is to be feared until the vesicles are fully formed." While I do not now dispute either theory, I do say that after much experience in this disease, extending over many years, I have never seen a case where I had any reason to believe the infection took place during the period of incubation. At the same time I am firmly of the opinion that the last mentioned theory—that infection does not take place until the formation of the vesi-

cle—is dangerous, as I have positive evidence of two cases that became infected on the first or second day of the papule.

It would seem a waste of time and an insult to the intelligence of the reader to discuss the question of vaccination as the only preventive measure that is known to successfully avert smallpox. But how and in what manner it should be used is a matter deserving thoughtful consideration. Of late it has become very fashionable to extol bovine virus on account of its purity, and the impossibility for it to produce sepsis, and to discard humanized virus on account of its impurity and probable blood poisoning qualities. During the last epidemic, and others that preceded it, I saw many bovine virus points discolored, which I discarded, believing it unsafe to use them thus partially charged with blood of the animal and other foreign matter, thus negating, in a certain degree at least, the purity theory.

Experience and observation have shown me that bovine virus will fail to produce the desired effect in about 25 to 30 per cent of cases. I am of the opinion that humanized virus, taken from the arm at the right time, that is, on the eighth day, when in the vesicular stage, entirely free from any accidental bleeding, with nothing but pure lymph, is as equally free from danger as the best of bovine, and is more reliable than bovine, the failures to succeed in primaries not amounting to 5 per cent, and not as furious and severe in its operation and equally protective in its effects. If again, as I have been in the past, situated where I must have sure and reliable results from vaccine, I should use humanized virus.

It is well understood that no two cases are alike, so the treatment must be necessarily different. But the general plan was of a supporting and tonic character. Beginning early with quinine and the most easily digested nutriments, very soon adding whisky or other stimulants, during secondary fever with a high temperature, I gave antipyretic doses of quinine, with good results. I always kept my patients in a dark room, paying due attention to good ventilation. The face was covered with a paste of simple cerate and subnit of bismuth, with the good effect, I believe, to prevent the disfigurement by pitting.

The thirty-one cases were so situated socially that I sent only one to the smallpox hospital. I was able to maintain such perfect isolation by placing guards, flags, and notices, as not to necessitate a proceeding so unpleasant and repulsive to patients and friends, though increasing to a great degree the expense.

The whole expense to the County of San Joaquin and the City of Stockton, and none was spared that was necessary to stamp out the epidemic, was much larger on account of maintaining separate isolated hospitals than it would have been had all or a majority of the cases been sent to the hospital. Including salaries of night and day guards, medical attendance, nurses, funeral expenses, vaccine and vaccinating, the expense was \$2,139.

One case was so uncommon, as in my own experience I had never met one like it, nor had any of my professional brethren here, that I make mention of it. A child two years of age had a very severe attack of confluent variola. It went along quite satisfactorily, with the usual amount of swelling of eyelids and other parts of the face, till one day, when the swelling of the lids had abated, I was able to detect on both corneas a pustule which produced total blindness. With all due respect for our calling, I will say I was glad my patient died from exhaustion on the sixteenth day.

The safety of the community intrusted to us demands the utmost care on our part in the "finale" of a case of variola. A patient is dangerous and capable of much mischief as long as a scab remains on his person, and

He should not be discharged until by the closest examination it is ascertained that he is perfectly free and clean. All clothing used by patients, sheets, pillows, etc., should be burned. We cannot be too destructive. Nothing affords as much security against smallpox germs as fire. In fumigating the apartments occupied by smallpox patients I usually use chlorine gas, or sulphur burned with alcohol. The walls, floors, and other wood work are to be thoroughly washed with chloride of lime and water, and then repainted or varnished, and walls newly papered. It is impossible to be too particular and thorough in this last proceeding.

To make the management of a variolous epidemic a success, we must have the hearty support and coöperation of the municipal authorities, and when a measure to be taken is deemed by the Board of Health or Health Officer to be actually necessary the cost or expense should be of secondary importance.

CHARLES A. RUGGLES, M.D.,
Health Officer of Stockton, Cal.

THE EPIDEMIC OF SMALLPOX IN ST. JAGO DE CUBA IN 1887.

By PHILIP C. HARTMANN, M.D.

St. Jago de Cuba is one of the oldest towns in the West Indies. It is nearly four centuries old. It has no drainage except the surface. Many of its streets are filthy, and but for the heavy rains, that take place at certain seasons of the year, and which make then every street a torrent, things would be still in a worse state; and in regard to hygienic measures nothing has ever been done. The reigning disease is the malarial, and in some years the yellow fever is very fatal to strangers and the unacclimated. This city has a population of forty thousand, of which eleven thousand are white, the rest negroes and mixed races.

In the spring of the year 1887 the city was stricken with an epidemic of smallpox, which, for its severity, will be for a long while remembered. The first case was a military officer, who arrived here in a steamer from Havana and Baracoa. He was landed without ceremony, and lodged for treatment in a house near the center of the city, where he was attended without any more precaution than if it had been a case of intermittent fever. The writer of this article, on the very day of the landing of this individual, went to the Governor and explained to him clearly the dangers that threatened the city, and the calamities that would arise if steps were not immediately taken to have the sick man removed and isolated. This step was the more urgent, as the majority of the people were either not vaccinated, or had not been for a long time. A note was taken of this, and that was all that was done.

Some days later new cases commenced to be reported. One of these was taken to the Centro Benifico, a small hospital sustained by a society for its own benefit. This hospital was situated on a main street, and back of it was an alley inhabited mostly by colored people, with very few vaccinated ones among them. The waters used for washing and bathing this patient were thrown out into this alley, and in a few days there was hardly a house in it that had not some of its inmates down with the disease, and many died.

From this focus it commenced to spread in all directions, causing much alarm among all classes. The attention of the authorities, by the clamor of the press, was at last called to the case, and vaccination committees were appointed to take charge of the different districts and vaccinate all those that were not protected, even had it to be done in a compulsory manner; but so great was the fear of the operation, especially among the negroes (but not limited to them alone, for many of the whites held the same ideas, viz., that vaccination brought on an attack of smallpox in all who attempted it during an epidemic of the disease), that on the approach of the committees the children were carried away or hidden by their mothers and neighbors with the pious object of saving them from the virus of the dreaded vaccinators. Thus very many remained unprotected and they soon fell victims to the scourge by hundreds.

Now, in the portion of the city inhabited by the wealthier and better educated class, there was not a single case, owing to the care that had been taken in regard to timely vaccination.

Never was any attempt made to isolate the sick, nor any other means taken to prevent the spread of the disease. In the month of June, two hundred and six died; July, three hundred and sixty-four; August, two hundred and thirty-four; September, eighty-two; October, twenty; total, nine hundred and six. The number of persons attacked was considerable, many more than was reported (two thousand one hundred and ninety-four), as the physicians, regular and irregular, who attended did not report but a small number of the cases that came to their notice.

P. C. HARTMANN, M.D.

REPORT ON ANIMAL VACCINATION.

By HENRY A. DU BOIS, PH.B., M.D., of San Rafael, California.

This report resolves itself into two parts. First, a brief consideration of animal vaccination; and second, a statement of what has been so far done at the only vaccine station on the Pacific Coast.*

ANIMAL VACCINATION.

It is now ninety-four years since Edward Jenner vaccinated James Phipps with virus taken from the hands of Sarah Nelmes, and tested the protection thus given the former by inoculation with smallpox virus, without effect. Since this event, an event ever to be remembered in the science of preventive medicine, virus has been taken from children and used for the protection of the inhabitants of every civilized country from the ravages of smallpox. Almost from the date of the discovery doubt was thrown on the protection thus given. Jenner believed that it lasted throughout life, and inoculations thirty years later than the original vaccinations were certainly, in many cases at least, unsuccessful; while if we give credence to the reports of certain public vaccinators, who report 80 to 90 per cent of secondary vaccinations as successful, our opinion must be that the protection given by this operation is limited to a very few years at most. The general opinion of those competent to form an unbiased judgment, from an impartial study of all the facts, seems to be that the protection lasts in some cases for life, but more often diminishes as time goes on, so that it fails to give efficient protection after a certain time, which varies in each individual case. Almost all authorities agree now in advising revaccination; some once, while most consider repetitions of the operation at various ages more prudent, if not absolutely necessary to give full protection. There are, however, some able men who still maintain that the protection given by this operation, if properly performed with virus taken directly from the cow, or only a few removes from its origin, and at once introduced into the system of the recipient, is practically for life in most cases, and found their opinion on the following facts: Jenner's vaccinations, and those of his immediate followers, were generally tested after a longer or shorter time by inoculation, and almost uniformly without success. Since this period statistics show that smallpox in those periodically vaccinated is by no means uncommon, and apparently until a few years ago the percentage of those thus becoming diseased increased steadily. This they explain by the want of proper care in the performance of the operation, and by the use of imperfect virus.

I think any one who will carefully examine the literature of the subject

*NOTE.—This report is made at the request of Dr. Orme, President of the State Board of Health of California. It was first intended to include the full consideration of the nature of virus, as well as the technique of its production, storage, and distribution, but as this plan involved a number of colored plates to make the appearances of the characteristic vesicles intelligible to the reader, which, perhaps, fortunately for him, the State was not willing to pay for, I have reserved most of the material collected relating to this portion of the subject for publication elsewhere; and have aimed here to be as brief as the subject would admit of.

will agree with me when I say that physicians generally for many years after Jenner's discovery knew more about this operation than they do now. That it was not then, with the memories of inoculation still fresh in their minds, considered a trifling one, that could be safely intrusted to any untrained operator. Jenner certainly never wearied in urging that no one should be allowed to vaccinate until he had been first properly trained. Further, I think that humanized virus can be materially improved or impaired by the physical condition of the children, through whose system it is passed, and that on the whole virus generally in use in this country fifteen years ago, before the introduction of bovine virus, showed a great difference in its effects when compared with the action of the latter, this producing vesicles resembling in character those of the classical description given by Jenner. My own opinion is that want of instruction lies at the bottom of this whole matter. The medical student of the present day really knows nothing of vaccination, and the practitioner too, generally, only what he has learned by a not too fruitful experience. I can find no positive evidence that virus must *necessarily* deteriorate by its continued passage through the human system, but there seems the strongest evidence that humanized virus in England and in this country at least, and probably in other countries also, before the introduction of animal virus had a shorter period of incubation, a less typical vesicle, a less defined areola, and caused less constitutional symptoms than in Jenner's lifetime. Certainly in comparing a personal experience of a good many thousand cases vaccinated with humanized lymph from 1861-8 with a more limited number in recent years, in which animal virus has alone been used, the difference has been marked, though one chiefly of degrees.

Statistics in England show a gradual lessening of protection, or else an increased infectiousness in smallpox. Revaccinations seem now required at shorter intervals than for some twenty to thirty years after its first introduction, at least such seems the case so far as a comparison of the effects of subsequent inoculation in early times with the apparent necessity of frequent revaccination in the present. As this test is not available we cannot, of course, ascertain with the same degree of accuracy the protection afforded. As to the frequency of revaccination, there are no statistics to enable us to determine the average period of protection with any approach to accuracy, and any regulations on this subject for the benefit of the public should, of course, be based on the least period of time, not on a general average of time that protection is given. Perhaps vaccination at three to six months after birth, at twelve years, again at twenty to twenty-five, and perhaps after forty, with revaccination at any age before or during an epidemic, would comply with the result of the experience of those who have devoted most thought to this subject.

There seems to be evidence, chiefly from Belgium, to show that by the use of animal virus as great if not greater protection can now be given than was in early times afforded by the virus first introduced by Jenner. It must be remembered that in this country animal vaccination has been largely in use for fifteen or more years. So in any comparison of the activity of these two forms of viruses, due allowance must be made for its influence on the humanized virus of the country at large. We can, in fact, in this country at least, obtain no virus humanized for a length of time to compare the animal virus with. So repeatedly have the profession gone back to the cow, that it is doubtful if a single case of cowpox can now be found in the United States, whose virus has come from Jennerian stock.

What are the advantages and disadvantages of using either virus, and which, on the whole, is preferable? We have already alluded to one

decided advantage—the greater activity of bovine virus, properly propagated and stored, when successfully introduced into the system. By this I do not wish to be understood to mean that as ordinarily used it will “take” in a greater proportion of cases. Very little experience is needed to convince one that this is the exact reverse of the truth. The introduction of a virus from one species into the system of another with a lower body temperature always presents more difficulties than in the introduction of the virus of the same species. What I mean is that *when successfully introduced* its action is more thoroughly constitutional, and the local effects are the exact counterpart of those described as typical by Jenner, and which resisted inoculation many years subsequently. I have here, I believe, presented what to my mind is the chief advantage of animal virus, as well as its chief disadvantage, its thoroughness when inoculated, and the difficulty attending its inoculation.

It may, perhaps, be well to illustrate this briefly. Buist, of Edinburgh, holding an official position as teacher of vaccination to the local Board, says, in a very excellent original work recently published, that four scratches one third of an inch long and three fourths of an inch apart, made with a needle, will, if the virus is taken from a healthy child (along-side), at the seventh day produce four good sized vesicles, causing cicatrices covering, collectively, at least half an inch square, while if the lymph is half an hour old only one or two vesicles will form, and these much smaller in size, and that to secure results equal to those of the fresh virus at least forty-eight scratches, close together, will be found to be necessary. The directions that he gives for the use of all stored virus, humanized and animal, are precise and worthy of note, especially in this State, where the “*vaccine rake*” seems the favorite instrument. The directions are there officially issued, and direct that the arm shall first be well *washed* and *rubbed* until dry and reddened. The vaccine virus is then applied and the scratches made through it with a *new* needle, so as not to draw blood. The virus is rubbed into the scratches with the eye of the needle, which is then thrown away. When primary vaccination fails, he directs the operation to be repeated with arm-to-arm lymph, as he justly says that even apparent failures are proved to exert some constitutional influence, which can only be overcome by a more active material, while in partial failures he recommends a second vaccination a few days later, which even when no vesicles result hastens the formation and increases the size of those resulting from the first vaccination. Another comparison of these two forms of virus shows that convenience may sometimes be in favor of one, and at other times of the other. Thus, with a compulsory vaccination law, strictly enforced, arm-to-arm vaccination is practicable, and can be practiced by a trained corps of vaccinators, thereby avoiding much of the danger incident to the use of humanized virus. In this country, with no such law, and with no special training required of the operators, these advantages do not exist. Arm-to-arm vaccination becomes always a troublesome operation, and often impossible, forcing us to resort to some form of stored virus. Bovine lymph, on the other hand, can always be had. Calves can be selected, and, with a thermometer, the progress of their inoculation can be watched, and only virus from typical vesicles need be taken. The quantity of virus is also under control, a very important matter during an epidemic. These are undoubtedly great advantages, but they are unfortunately nearly all neutralized in this State. The State neither owns, controls, nor exercises supervision over any vaccine station. Health Boards, unfortunately, are political bodies, their members being, as a rule, selected, not for their reputation in preventive medicine, but rather

for their political influence. Virus is supposed to be bought in the open market. The cheapest reliable article is supposed to be secured. By whom and how propagated few Health Boards or physicians ask, and if they received a full reply, are not competent to decide as to whether a virus had been propagated with due care and skill, and there is no official authority to give them this information. Virus is found in the market opposed to virus, until, as Dr. Martin truly says: "In times of great demand (the time above all others when only what is known to be the best should be purchased) certain propagators have found this method" (alluding to his method of propagating virus by numerous small single vesicles) "far too old fashioned and 'unbusiness like' for their views. An animal must be made to yield fifteen thousand to twenty thousand points, or none."

He goes on to say that a full grown cow is selected and large sores are made, which, when inoculated, give rise to compound vesicles which frequently coalesce into one or more large sores, giving out an enormous supply of colorless serum containing few vacciniads, their place being supplied by pus cells and other septic matter, the product of inflammatory action. Such virus readily produces a powerful local action, not, however, the typical vesicle; often causes deep ulceration and resulting fever; is not infrequently accompanied by a general eruption, which can be communicated to others, causing sores difficult to heal, and leaving permanent scars. Virus thus produced is *cheap*. Virus produced from single vesicles, yielding only two hundred to three hundred points to an animal, and requiring to be taken slowly, must always be dear. So long as virus is judged by the *amount* and not by the *kind* of constitutional and local irritation produced, and so long as cheapness is demanded before quality, so long will vaccinations frequently present ulcerations accompanied with high fever. Smallpox may, as in a recent case, be contracted with "a splendid sore" on the arm, and thus the distance between the office of the public vaccinator and the pesthouse may not be far. This subject will receive explanation when we come to a consideration of the vaccine microbe and its spore.

There is yet another comparison to be made; and here everything, I believe, is in favor of the use of properly prepared bovine virus. Certain diseases can be communicated by inoculating blood. Syphilis, leprosy, eczema, erysipelas, repeated experiments have shown, can thus be communicated. Tuberculosis, it is probable, can also be thus transmitted. Whether any of these diseases can be transmitted by the liquor sanguinis contained in the vaccine vesicle, and in which the solid bodies which are proved to transmit the contagion exist, is not certainly known.

Dr. Cory, of St. Thomas Hospital, London, inoculated himself with syphilis, to show that pure vaccine virus contained nothing but virus; but it is by no means certain that, with all the care which he doubtless took, that he did not also inoculate blood. Practically, blood may exist in apparently pure virus. A careful microscopic examination is the only certain method of ascertaining its absence. This, obviously, cannot be made use of every time we vaccinate a child. Therefore, with every precaution we may take, we may inoculate blood; and thereby, if not in the lymph itself, transmit another disease. Statistics fortunately show that this seldom occurs. Some twenty-four cases have been reported in England, and about three hundred on the continent. I have no information of the number that have occurred in this country. Bovine virus is entirely free from this danger. Calves rarely have tuberculosis, veterinarians state, though some varieties of cows, especially after calving, are very subject to it, the proportion, according to Dr. Law, a United States Government Inspector, being as high as one half. If the animal is slaughtered from

whom the virus is taken, and before its issue, as is done by the State in Belgium, this danger is entirely done away with.

To sum up, then, I would say that, in my opinion, bovine virus propagated for *quality* only, by a competent physician, under proper official supervision, while it presents certain objections, yet on the whole is more reliable than humanized virus. It is entirely free from the danger of producing other diseases, and much more convenient than humanized lymphs, especially in this country, for all public vaccinations. Where it fails, the virus used being known to be active, and revaccination a few days later is unsuccessful also, arm-to-arm lymph should undoubtedly be tried. To use animal virus successfully its introduction must be accomplished. A careful examination of fourteen thousand ivory points used during the late prevalence of smallpox in this State showed very considerable quantities of virus remaining on eight thousand—considerably over half, it will be seen, of the whole number—sufficient, even after the points had been washed several times in cold water and bleached by a solution of peroxide of hydrogen, to well coat the points.

To preserve virus, dryness and an even temperature below 60 degrees Fahrenheit are necessary. There is no possible objection to the thorough drying of the virus on the points, provided that the necessary care is taken to remove it all when it is used. This is easily effected by tepid water, or glycerine and water, and allowing the points to remain moist for a few minutes before using. After using it is desirable to rinse the points in water to be sure that the coating is all removed. Dr. Martin directs that the virus shall be mixed with the water on the point by means of another point or a lancet. *Failure to remove the virus is a more frequent cause of want of success with animal virus than all other causes combined.* Warlomont gives an account of using virus that had previously in other hands failed, by moistening it with glycerine and water and allowing it to remain for twenty-four hours under a glass cover in a warm room, when it proved very active. Dr. Salmon, Chief of the United States Bureau of Animal Industry, writes me that in his opinion the best way of preserving animal virus is by its thorough drying on quill or ivory points, and its subsequent protection from changes of temperature. Dr. Winslow Anderson, of San Francisco, one of the public vaccinators, tells me that he uses glycerine and water, and has recently tested some Pacific Coast vaccine and obtained a typical vesicle with a point which had been fifty days in his office. I have used successfully on calves and children virus much older than this—in one case fifty-eight days, in another ninety days, and later one hundred and fifty days—with as good results as to type of vesicles and yield of virus as I have obtained with virus a few days old, and Dr. Martin states that he has successfully used virus dried on ivory points a year old.

Passing over the history of the introduction of animal virus, as well as the technical methods on which its successful propagation depends, which latter, though simple, involves constant attention to minute details, which would be of no interest to the general practitioner, and which, to make them thoroughly understood, would require much space and a number of carefully executed plates, I come to the theoretical portion of this subject; and first, what is vaccine? How does it act on the human body so as to render it insusceptible to the contagion of smallpox? A brief statement of the present state of opinion on these subjects, and a still shorter account of the establishment of the first vaccine station on this coast, will close this report.

THEORY OF VACCINE PROTECTION.

The active agent in vaccine virus can be separated by an earthen filter, and is found to be solid, not fluid—so much experiment seems to prove. This solid is believed to be a vegetable germ, because it has the power of reproduction, which inorganic matter has not. It is believed to be vegetable in its nature, from its close resemblance to yeast, and to certain fungi, and to be an air absorbing spore, and not a full developed microbe. While the microbe is readily cultivated in solid as well as fluid media, the spore or germ is found difficult if not impossible of reproduction outside the body. It is readily developed, however, into the mature microbe, or its development can apparently be stopped at certain stages; each of these stages seems to produce a characteristic coloration when the cultivation is made in a solid media, as in gelatine or agar-agar. These colors, so far as observed, are white, yellow, orange, and brown. The action of all of these colored cultivations, when inoculated into the system, differs greatly from that produced by the fresh virus transferred at once from arm to arm. They seem also to differ in some respects one from the other, though so far the exact differences have not been fully studied. Thus there are found a colorless virus, taken early (before the eighth day) from the vesicle; a cloudy or white virus, taken after the areola forms, and which is also produced by artificial cultivation; and the yellow, orange, and brown viruses, produced by cultivation outside the body.

It may be asked how does this spore or germ of a microbe produce a disease in man, and is the disease produced smallpox, softened and modified in its action, but essentially smallpox still, or is it a new disease which produces such changes in the human system as to unfit it to receive the germ of variola. Briefly we may say that this spore entering the system in "true vaccine," develops into the microbe by absorbing free oxygen from the cells of which the body is made up. This oxygen the cells part with, but only after a certain resistance, so that if the spores are only few in number and of feeble vitality, few succeed in developing into microbes. Most of them are starved and die. Two things happen, however, with those that live. These take oxygen from the cells for their own growth, and in doing so give out a specific toxic alkaloid or ptomaine, which in its turn, so to speak, stupefies the cells, so that they give up their oxygen with less resistance. This mutual action goes on until no more of this poisonous alkaloid is formed by the germ, because it can obtain no more free oxygen from the cells. The cells unpoisoned retain their oxygen, while without it the spore remains a spore, and does not develop into a microbe. How this ptomaine causes the cells to give up their oxygen is so far unknown. Its action seems to be upon the bioplasm—the living jelly of which all animal and vegetable life is built up.

Such is the theory advanced by Dr. Salmon, of Washington, to explain contagious diseases produced by air absorbing microbes. If true, it must be able to explain incubation, or the latency of a virus—the protection given for a longer or shorter period—together with succeeding susceptibility, as well as to account for the enormous increase of the virus in the body, and for the identity of each contagious disease. If it does all this, it must do still more, to entitle it to our belief. When we cultivate the germ outside the body in a suitable medium supplying it with oxygen, if this theory is true, it should produce a soluble alkaloid or ptomaine. If it does this, such specific ptomaine, being soluble, can be separated from the germs which produce it; and, if isolated and injected into the body, should produce such a change in the cells as is produced when it is formed within

the body by the germs themselves. Dr. Salmon claims to have cultivated the germs of hog cholera in a fluid medium to full development, and then by a certain degree of heat to have destroyed all microbes; and yet by injection of this fluid in pigeons—very insusceptible to this particular contagion—to have produced this disease. In other words, to have produced hog cholera by a soluble chemical alkaloid or ptomaine, which had previously been produced by the artificial culture of the germ of this disease outside of the body. The effect of the action of the ptomaines of various pathogenic microbes are more or less lasting on the cells, and while under their influence they are not susceptible to the particular disease, for the reason that no more spores can obtain the necessary oxygen from them to enable them to develop into microbes, and hence no more ptomaine is produced. This is, however, thought to be true only of moderate doses. Large doses seem to be able still to poison the cells and to take more oxygen from them. The cells apparently become accustomed to the action of the ptomaine, and this tolerance can be increased by successive inoculations of increasing strength, while the cells will be affected if the dose of the ptomaine is increased too rapidly. *The tolerance of the cells for the particular poison is, therefore, the cause of subsequent protection.*

A period of protection is thus accounted for, of longer or shorter duration, according to the nature of the specific microbe, as well as to the size of the dose and the thoroughness of its introduction into the system. When spores are introduced into the body, a certain time elapses before they have developed sufficiently to have poisoned the cells by their resulting ptomaine, and to take their oxygen. This period is that of incubation, while it is followed by that of the development of the symptoms of the disease. A period of fermentation thus exists, in which a poisonous alkaloid is formed, the amount of which is limited by the amount of oxygen taken from the cells, *and the process of nature to excrete this substance from the system and to repair its effects we call the disease.*

If I understand Dr. Salmon correctly, during the time from the introduction of the virus to the development of the symptoms of the disease, the spores are developing, taking oxygen and giving out their ptomaine and propagating spores. After a certain number of cells have become affected we have external manifestations of the disease. Until this period arrives the germ is said to be incubating. The period of latency is, therefore, apparent, rather than real, and only indicates that sufficient poison has not yet been formed by the microbes to cause external symptoms.

Dr. Salmon's discovery claims that the inoculation of the product of the artificial development of the germ, *after* the subsequent destruction by heat of the microbes, enables him to protect the system of an animal from the disease, and that the action of the ptomaines is milder than that of the germs themselves, as the dose can be regulated. His experiments have so far been made with pigeons, with the microbe of hog cholera, and seem conclusive as to the protection given by a number of hypodermic injections of the ptomaine solution, but he does not, so far as I can ascertain, tell us if the discharges of these pigeons were capable of communicating the disease. Unless the specific ptomaine is capable of influencing unspecific germs to take on a pathogenic action, it does not seem possible that the poison of the disease can be increased in quantity. If the pigeons give out more of the ptomaine than was introduced into their bodies, unless we assume that it acts on innocent germs in such a manner as to make them pathogenic also, the theory falls to the ground, even though protection be given by the action of the ptomaine injections.

This theory is yet new; it seems to me of exceeding promise, but before

it is fully accepted as an explanation of the phenomena, more extended experiments will have to be made. All that can be said of it at present is that it includes what seems proved to be true in the exhaustive theory of Pasteur, as well as in the ptomaine theory of Chauveau. As a valuable working hypothesis I give it, which may at no distant day become a firmly established theory, which will give us a deeper insight into contagion, together with all that that implies, viz., scientific methods of destroying the microbes in many, perhaps all, the diseases produced by specific microbial fermentation.

It would take too much space to recall the varied experiments made by Buist, Quist, and others, by which they have succeeded in propagating the microbes (and even the spores, it is claimed by the latter) of vaccinia and variola, and have thereby, to a certain extent, confirmed the earlier experiments of Ceely and Badcock, as to the identity of the viruses of these diseases, not only so far as the microscope can do so, but also so far as their cultivation in artificial media, fluid and solid, is concerned.

IDENTITY OF VIRUS OF SMALLPOX AND VACCINIA.

Robert Ceely thought that he had proved that he could inoculate a cow with smallpox, and produce a disease with a local vesicle, from which he could obtain virus; with this he tells us subsequently two thousand children were vaccinated without causing contagion in others. Chauveau and the Lyons Commission admit that he inoculated cows with the smallpox, but claim that the two thousand children were simply inoculated, and not vaccinated, and that the disease in them was contagious. It is a question of evidence: which is correct. Ceely is confirmed by Badcock's numerous experiments, and Chauveau is supported by Fleming, who, however, has no original experiments to offer, and is opposed in his conclusions by Professor Simmons, an equally reliable authority in veterinary matters. The Lyons Commission seems not to have been acquainted accurately with the English researches on this subject, and make many statements at direct variance with them on very slight proof. Ceely and Badcock found it *very difficult* to inoculate the cow; only about one out of thirty animals took. They obtained a well defined local vesicle, but no general eruption. Cows so inoculated failed to give the disease to others stalled with them. Badcock's experiments were made on over three hundred cows; Ceely's on a less number, but were carefully recorded and illustrated by colored plates from paintings taken on the spot. Badcock's virus has been used on over forty thousand persons, and Ceely's on a very large number, and both, after forty years, are still in use in England.

The French experimenters claim to have succeeded in *every* animal that they operated on, viz., twelve cows and three horses. The disease that they produced consisted in small vesicles scattered under the hair of the body around the seat of inoculation, and in their first five cases escaped recognition until subsequent experiments had taught them what to look for. They seem to have got no well marked vesicle at the point of inoculation, but rather an ill defined sore with small vesicles around it. With *matter* taken from this *sore* by scraping, they inoculated a number of children and produced a general eruption, which was contagious, and which caused the death of a child with the symptoms of confluent smallpox.

Can we throw any light on this great difference in reported facts? We think recent researches help to explain, to some extent, this matter. First we may say that positive facts, from carefully conducted experiments on a sufficiently large number of animals, by competent experimenters, cannot

be overthrown by simply negative evidence on a much smaller number. The disease observed by the French experimenters did not resemble in any respect the disease described by Ceely and Badcock, as well as by several continental experimenters, either in appearance, period of incubation, or in the nature of the virus produced. It may be remarked that the descriptions of Ceely are almost classical in clearness, while the account of the experiments reported by Chauveau are unsatisfactory on many important points. English authors claim, with some show of reason, that smallpox matter, in an advanced stage, was placed in cuts and caused sores, but failed to affect the system of the cow. Simmons states that he and Marson made many experiments, and failed in producing smallpox in the cow: he, therefore, does not believe that the French Commission could have so uniformly succeeded, as they claim to have done: and he denies that they produced the smallpox at all in the cows that they experimented on, but claims that they simply introduced the virus into cuts, and caused a local irritation, and subsequently removed and used this matter to inoculate children. That they blundered, and that fatally: that the general eruption observed was either caused by irritation, or was of the nature of eczema; and that the short period of incubation would favor this explanation.

BUIST'S RESEARCHES.

Buist has shown that spores of vaccine and variola microbes measure but $.15 \mu$ (micromillimeters), while the microbes are much larger, as seen in cultivations of the clear lymph in the form of white, yellow, orange, or brown vaccine, or in the cloudy virus in the mature vesicle. When he vaccinated a monkey with the clear virus containing the spores alone, he produced a local vesicle, well defined, with slight constitutional disturbance; but when he used the developed forms of the microbe, as found in the colored vaccines, he got secondary vesicles also on other parts of the body.

Jenner believed that in vaccination he produced smallpox, but that the disease, owing to the previous passage of the virus through the cow's system, had lost its virulence and contagiousness. This change Pasteur calls attenuation of the virus. Buist says that perfectly fresh, transparent virus contains spores alone, whether vaccine or variolous, and that opaque lymph is only a natural cultivation of the spores into microbes, and that while the clear lymph is alkaline, the cloudy is acid, and that the action of these two lymphs is very different—the clear, as we have already said, acting with little local or constitutional irritation, while the cloudy causes ulceration and secondary vesicles.

He believes the spores are able to reproduce themselves by bursting, while the microbe multiplies by division as well. When the spores are inoculated they remain for a time at the place of introduction without causing irritation, and are gradually taken up by the lymphatics probably, and in them it may be the greater number of spores become developed into microbes and affect the system. The beginning of local irritation he believes indicates the development of microbes on the skin and their propagation of spores, which in their subsequent development effects rapid changes in the tissues by the withdrawal of something from them, by imparting something to them, and thus altering their actions. He failed to propagate spores in solid media, though he gives credit to Quist for having succeeded in Koch's culture fluid. He believes that instead of trying to improve our stock of virus by energizing that already in use, we should rather endeavor to mitigate by artificial culture variolous virus, using only

virus taken in the papular stage of the disease, before clouding has occurred. Both diseases he believes true fermentations. All fermentations he considers due to the development of spores into microbes, and to their propagation causing certain chemical changes, as the decomposition of sugar into alcohol and carbonic acid, which goes on until the sugar is used up, but may be started by a fresh supply; therefore, the microbes apparently are still alive, though dormant for a time. He finds that by inoculating dried yeast he can produce, after a certain time, a local sore, and he finds the yeast spore in the blood. In the monkey, vaccination did not fully protect it from smallpox inoculation, but after the additional yeast inoculation the protection was complete. By itself it modified the disease, though it did not prevent the entire formation of vesicles.

To return then to Ceely's experiments. He states that he used only perfectly limpid lymph in his inoculations of cows; Chauveau used the cloudy virus. It does not seem to me disproved by any experiment that has been recorded that cows cannot be so inoculated by smallpox virus as to have an eruption entirely different from the typical local vesicle obtained by Ceely. Indeed Buist's experiments would go to show that certain kinds of variola virus might produce a more general eruption than obtained by Ceely, Badcock, and others. If virus, at a late stage, containing microbes, not spores, be used, we should look for a general eruption. In the monkey neither the primary nor secondary vesicles caused the disease in other animals in the same cage. He does not, however, account for the well marked contagiousness of variolous inoculations in man, even when made with the virus taken perfectly clear from papules. He evidently believes that the cow's system attenuates the virus, and suggests its attenuation outside the body by suitable methods, as dilution (Salmon), or prolonged exposure to air (Pasteur). He, however, records no experiments on man; and, while his researches go to show how the Lyons Commission may have obtained a general eruption, they do not (as their object was different) prove conclusively the identity of the two viruses, though they tend to confirm what I at least consider as fully proved by evidence, the creditability of which I cannot doubt, and which has been so ably presented by Robert Ceely, viz., that cowpox is, in the cow as in man, only a modified smallpox, and that Jenner was perfectly accurate in speaking of the *vaccine variolæ*—the cow smallpox—and it is to be noted he refused to use any other name, apparently thinking that it might encourage the idea that vaccinia is an independent disease.

GENERAL CONCLUSIONS.

1. Vaccination is the artificial growth of a ferment on the skin, the products of which are absorbed and grow in the blood until the whole of the blood is affected, after which it is impossible, for a time at least, to repeat the process in the same person, who is then said to be protected. (Buist.)

2. The cause of this fermentation is due to the development of a microbe closely allied in all probability to yeast. This microbe is found in various stages of growth—as a spore, when the virus both in and out of the body is alkaline; in more mature forms, as found in the white or cloudy virus, seen after the areola forms or in old stored virus, and also in cultivations in solid media when the reaction is acid. We find varied forms or stages of growth of the microbe, which are indicated by characteristic colors, and which are able to reproduce themselves. These are, as named from their color, white, yellow, orange, and brown.

3. This microbe inoculated as a spore multiplies on the skin and in the

interior of the body, and develops into more mature forms. In doing this it takes free oxygen from the cells, and without it, it cannot develop. The interior of the body has been proved to contain little oxygen in the free state and the protoplasm of the cells to require but a scant supply. If the spores are more active than the cells, they absorb oxygen and excrete a ptomaine which paralyzes, so to speak, the functions of the cells. A ptomaine has been produced in the case of hog cholera outside of the body by the culture of the specific microbe in a suitable medium and its subsequent destruction by heat. Such a solution produces the disease when injected under the skin. The spores exhausting the oxygen of the cells in their development are rendered dormant or destroyed, and this terminates the disease. (Salmon.)

4. The microbe of smallpox and vaccinia are the same. This is proved by the inoculations of cows by Ceely and Badcock, and their conclusions are not in my opinion disproved by the experiments of Chauveau, and the arguments of Fleming and others. Though the microbe is the same in these two diseases, it is rendered probable by the experiments of Buist that their stage of growth is different. It will be remembered that he made cultivations from different vaccine vesicles and obtained four if not five kinds of virus characterized by their colors, viz., white, yellow, orange, and brown, besides the opaque found in the late vesicles. He also found that any one of the first four would produce a general eruption but no local vesicle, but if all four were inoculated a vesicle was also formed. He obtained similar colored viruses from variola. A single cultivation of the clear variola virus, taken early from papules, caused a modified action, as shown when inoculated on a monkey, while a second cultivation rendered its action still lighter and the monkeys both failed to give the disease by infection.

5. The only suitable material for vaccination is that containing spores alone, and not other developmental stages of growth of the microbe. Spores produce a typical vesicle, and no general eruption. Microbes in all their other stages cause great local irritation and often a general eruption. To this cause, doubtless, may be attributed the not uncommon eruptions that were found to follow vaccination with certain animal viruses during the recent prevalence of smallpox in this State.

6. All authorities are agreed that arm-to-arm or calf-to-arm vaccination is that most certain to produce typical vesicles in the greatest proportion of cases, and without undue local irritation or general eruption. Of all stored lymph, that preserved by drying *thoroughly* and *quickly* keeps best and preserves the spores in the spore state, but it requires special skill in using to remove the virus from the points, and to introduce it into the skin.

RULES FOR THE USE OF ANIMAL VIRUS.

The following rules are the result of the most recent research, and may, perhaps, be found convenient to the reader:

1. Only vaccinate those free from fever or skin eruptions, except when absolutely necessary.

2. Cleanse the arm with soap and water and rub until red.

3. Moisten the point in lukewarm water or glycerine and water, and mix the virus on it with the moisture with another point.

4. Apply the virus to the part to be vaccinated, and scratch the skin through it with the point or with a needle, or abrade the skin first with the sharp sides of the point, and then apply the virus. In either case, it is better to make two vaccinations at a distance of an inch and a half from

each other, and each at least one quarter of an inch square. The virus must be *rubbed* in well. *Whatever instrument is used it should never be used for another case.*

5. See that the vesicle is not injured. Apply, if necessary, jewelers' cotton and a bandage over it, if there is any danger of exposure to infection, dust, or cold.

6. See cases in one week: give only provisional certificates until results are known with certainty.

7. Keep animal virus dry and cool. The temperature should be steady and not over 60 degrees. This may generally be done by wrapping in gutta serena tissue, and putting in a wide-mouthed jar, in which is a small uncorked wide-mouthed bottle containing unslacked lime, closing securely the jar and keeping it in the cellar. Virus will often become inactive in a few hours if exposed to moisture together with sudden changes of temperature.

8. Virus apparently inactive will often become active if wet with glycerine and water, and the virus well mixed with it and allowed to stand under cover for several hours in a warm room before using.

9. Examine all points after using by pouring water over them to see that the virus is all removed.

10. Lastly, take plenty of time, use enough virus, and be sure that it is well rubbed in, and the scarification dry before you dismiss the patient.

NOTE.—Animal virus that produces in any considerable proportion of cases local ulcerations, much fever, and secondary eruptions, if free from septic material, is a virus containing the mature forms of the microbe, and not the spores alone. It is usually propagated by large abrasions in adult animals, which give an enormous yield of liquor sanguinis, with microbes in different stages of development in it, and frequently pus and the results of inflammatory action also. It is very active locally and constitutionally, but is not a pure virus. It is responsible for many of the accidents that sometimes attend this operation. All authorities are agreed that pure animal virus, *i. e.*, virus containing spores alone, acts with little irritation, and that its course is slower than long humanized virus. Virus is never to be judged by the violence of its action, either locally or constitutionally, but rather by its action conforming to a Jennerian type.

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CEELY, ROBERT—"Observations on the Variolæ Vaccinæ" and "Further Observations, etc.," contained in volumes viii and x of the Transactions of the Provincial Medical and Surgical Association, 1840 and 1842; also a letter in London "Lancet," February 7, 1880. A model investigation of the identity of smallpox virus with that of vaccine. Experiments conducted with great care and recorded with the most minute accuracy and every appearance obtained, illustrated by most admirable colored plates, amounting to nearly one hundred separate illustrations.

FLEMING, GEORGE—"Human and Animal Variolæ, a study in Comparative Pathology." London "Lancet" for 1880. Also revised and printed in 1881 in book form by Baillière, Tindall & Cox, London. These articles are numerous, but contain no original experiments, and are chiefly valuable for a strong partisan presentation of the side of the dualists. I have relied on them principally for an account of Chauveau's experiments. They have tended to confirm my belief in the accuracy of Ceely's experiments, not to weaken it. To show that equally high veterinary authorities hold opposite opinions, I quote from the remarks of Professor Simmonds, of the Royal Veterinary College, as given in the "Lancet" of January 3, 1880: "He ridiculed the idea of Ceely and Badcock's experiments in successful variolisation of cows, and consequent production of vaccines being disputed. He himself in conjunction with the late Mr. Marson, had been one of the largest unsuccessful experimenters on the variolisation of cows, but his failures had not led him to doubt Ceely's and Badcock's successful experiments, with full knowledge of the evidence regarding them. Mr. Marson's skill had prevented him from perpetrating the blunders into which Chauveau fell, blunders arising in a great measure from ignorance of what had already been done in England on the subject."

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FIRST ANNUAL REPORT OF THE PACIFIC COAST VACCINE STATION.

This vaccine station was begun November 1, 1887, under the following circumstances: Having in my practice in California since 1869 experienced much difficulty in procuring animal virus that was both active and unirritating, I was led, as early as 1876, to make experimental inoculations of calves, and used the virus thus obtained in my practice with success. At this time I did not go further. A few years ago I vaccinated one of my children with animal virus obtained from a prominent druggist in San Francisco. This produced a large vesicle as early, I think, as the sixth day, followed by an extensive areola later. The vesicle, which was irregular in shape, ruptured, and a deep ulceration followed, extending to a depth of over half an inch and some two inches in diameter. The areola merged into a diffuse erythema, extending over the whole arm and forearm, and was accompanied by vomiting and high fever. The child was seriously sick for some two weeks, and the course of the disease was such as to make it a matter of doubt if she was protected. Subsequent vaccination showed that she was not fully protected.

Having since then had several similar cases with virus that I had supposed to be reliable, and having failed in over two thirds of primary cases in producing any effect with virus procured direct from reliable propagators in the East, by mail, my attention was directed to its local production. But upon making inquiries of the wholesale druggists in San Francisco I found the demand was irregular and limited, and the competition between various eastern viruses so great that there was little likelihood of obtaining sufficient from its sale to pay the necessary expenses of its propagation, without it was used largely by the various Health Boards of the State, as well as by the Quarantine Officer of San Francisco.

Here the matter again rested for some two years, when my attention was again called to this subject by inactive virus on one hand and by the results following the use of irritating virus on the other. Between these dates I had devoted more or less attention to this subject. I finally made up my mind to try the experiment of propagating virus in California, having exceptional facilities for obtaining healthy calves of a proper age and in caring for them economically, thus producing the virus at the least possible cost. I accordingly made a series of experiments on calves and cows with a number of eastern viruses, corresponded with several experts on the technique of its production, and obtained careful reports of the methods followed by the most reliable establishments, from physicians, who, at my expense, visited them so far as they were open to inspection. I also obtained minute directions from the veterinary surgeon employed by the New York Health Board for examining calves previous to vaccination. After repeatedly testing various viruses on calves, and the resulting virus on children, I selected the viruses propagated by Dr. F. G. Foster and by the New York Health Board as "stock."

About this time, and before the necessary buildings were completed, a sudden demand was made upon us for a large supply of virus, owing to

the rapid increase of smallpox in the State. Having only some five thousand uncharged ivory points on hand, and the demand being urgent, Mr. James G. Sheppard, pharmacist, of San Rafael, and who had kindly offered to take charge of the business of packing and dispensing the virus, agreed to recast used points for the San Francisco Board of Health, supplying one thousand a day, by special messenger, on the same day that the virus was taken, and, of course, without any testing of the virus on children (before issuing), at 6 cents a point—this being the exact cost of production, without any charge being made for the use of the "plant," or for the services of Mr. Sheppard and myself. The Board, Mr. Sheppard understood, promised a fair trial of these points in primary cases, and they were so packed that we could at once tell, by a number, from which calf any virus had come. Samples were also sent to physicians, requesting trial and reports, and a large number sold to physicians, druggists, and others.

The tests we made (subsequent to its issue) with this virus on children, as well as on calves, showed a good proportion of well developed vesicles, without any undue local or constitutional irritation, but there were a number of cases of raspberry excrescence, an irregularity very common in New York at the time our "stock viruses" were sent us, and which Dr. F. G. Foster states was peculiar to no one virus there. Revaccination showed that when accompanied by a well defined areola, that these protected, otherwise not. On this account, we substituted the Martin virus for one of the above, and since have not observed a single case of this irregularity in any subsequent testing. This virus was, after taking, dried over sulphuric acid (free from chlorine and nitric acid) before issuing. The coating was nearly colorless, and was very dry and hard.

The reports received as to the action of this virus have not been numerous, and indicate that in the hands of some physicians it produced a high percentage of typical vesicles, while in the hands of others it failed in every case, and this frequently with virus from the same calf. No report has been received by us from the Health Board of San Francisco. Statements have, however, been made in the daily papers that out of three hundred points all had failed. Dr. Anderson, one of their vaccinators, informed me that he had reported three hundred and nine successes out of four hundred points issued to him for the purpose of testing the virus, in primary and secondary cases.

The object we had in view in furnishing the virus to this Board at the actual cost of production, without asking anything for our own labor, was, of course, that it might be carefully tested. We received a request after the last delivery for the bill for the virus furnished, and a few days later an official communication that payment was refused, as the virus was unsatisfactory. Dr. Herrick has since published the reports of four vaccinators with it, and Dr. DeWitt, another vaccinator, personally informed me that he had used one hundred points issued to him in vaccinating a school, but as they had been mixed with those of another propagator, he could not say whether they had taken or not. Dr. Osborne, of the Home for Feeble-Minded Children, Dr. Durant, of the State Prison at San Quentin, besides a number of private physicians, have reported gratifying success.

We cannot help thinking that the San Francisco Board of Health obtained our virus under a misrepresentation, and that they failed to test it in primary cases as promised. Since this unfortunate experience we have issued virus dried more slowly, and coated to keep it from the air, and have had few complaints of its action, but we do not regard it as well adapted for keeping as that at first issued, which we still use to send to a

distance. To obtain energetic local and constitutional action (which we do not consider desirable) with either virus, all that is necessary is that the points shall be exposed to moisture and a heat of 90 degrees Fahrenheit for a few hours, when a sufficient number of microbes will develop from the spores to produce sufficient irritation to satisfy even this Board of its activity. This, however, is the exact object that every conscientious propagator uses every measure to avoid.

From the above it will be seen that we attribute the failures that have occurred in the use of this virus to the dryness of the coating of virus on the ivory points, and the consequent difficulty in its removal. That this difficulty was experienced though not apparently recognized with other viruses is plain, at least so far as the San Francisco Health Board is concerned, from the fact that out of fourteen thousand used points furnished us for recoating, about eight thousand had a decided coating on still, even after three washings and bleaching.

If our object had been simply to manufacture virus that would produce sore arms and fever, which the public prints of San Francisco stated—apparently by authority—were the signs following the proper taking of vaccine virus, we should undoubtedly have had fewer complaints and larger receipts from sales.

As our object was to propagate *spore virus* free from microbes as well as blood and all septic matter—"pure spore virus"—we must be content to wait until the knowledge on this subject has increased with the profession as well as with the public, before we can expect to be remunerated for our expenditure. Meanwhile, it is evidently a proper business precaution, and one necessitated by our past experience, to only issue virus already paid for.

One other observation, and I have done with this unpleasant portion of my report. Careful testing subsequent to issue of the virus first propagated showed that the virus of two, if not more, calves failed to take, and unfortunately for us, much of this had been sent out as samples. We therefore issued a circular, and refunded all money paid for this virus or replaced it by fresh stock. We were sorry, however, to receive a demand from a physician connected with a public institution for the refunding of money for virus never bought of us.

What have we done so far? We have secured some forty acres of pasture; have put up proper stables and operating rooms; have vaccinated one hundred and three calves and cows; and have coated twenty-five thousand points. We have spent \$2,500 and only received about \$1,500 for virus sold. If suit against the San Francisco Board of Health results in our favor, this will be increased by nearly \$300. The average number of points taken from a calf has been about two hundred and fifty to three hundred, and the cost to us of each point has been 6 cents, without including any compensation for our services. We have made diligent search for cases of cowpox throughout the State, and have investigated six cases; have distributed one thousand two hundred descriptions of the disease, offering a reward of \$25 for cases. So far, all have proved to be cases of "whitepox," but we are still continuing our inquiries, and hope in time to succeed. We have collected a small library, containing some rare books on vaccination. It would be impossible to make intelligible, without numerous colored plates, the technical methods employed, even if space would permit. We may say in brief, however, that we prefer calves about a year old, in good health, but not fat. That the temperature of these should be taken in the rectum, and should not show changes during the day. This temperature seems higher here than in the East, frequently being 101.5 degrees, and even higher in calves healthy in all respects. If there is no increase of temperature at night, and the animal

is free from diarrhœa and glandular swellings. I believe it safe to disregard the temperature if lower than 102 degrees, Fahrenheit, if it is uniform. The calf, which before using is best kept at pasture, is, after vaccination, put in a clean stall, bedded with fresh straw twice daily. It should have a pail of water to drink from, and should be fed with a good quality of hay, with two small feeds of bran with a little oil cake. Its temperature should be marked on its tag daily, and it should wear around its neck a light collar of wooden slats, to prevent it licking its abdomen. The method of inoculation that we prefer is by single incisions, producing simple vesicles. This plan is used by Warlomont, in the Belgium Vaccine Institute, with great success. Abrasions on the abdomen made by a blunt instrument is the plan used by Foster, while Pardoe, of the New York Health Board, uses a six-bladed lancet, and makes larger scarifications on the flanks and sides of adult animals. There is another method only in use by "the trade." I believe, it consists, like the last, in scarifications on the flanks of adult animals, but differs from it in the size and number of these and in the operators being uneducated. It is of this that Martin speaks in the quotation already given. These yield an enormous amount of serum, and it is said as high as twenty thousand to twenty-five thousand points have been coated from one animal.

An appreciation of these several methods leads us to the following conclusions, which further experience may perhaps modify. The method of small single incisions, which we use, is troublesome and yields a limited supply of very thick virus, which frequently requires much skill and a peculiar technique to remove free of blood. On the other hand, it produces on the calf operated on, typical vesicles, and the virus contains spores only. In my hands it has yielded from fifty to five hundred points—the average being, I think, about three hundred. It is in use in this country by Dr. Martin, whose father was the first to propagate animal virus in the United States.

By the second method a compound vesicle, or series of vesicles, under a crust, are formed, not so easy of recognition as in the former method. The yield of serum is larger, however. In the third method the yield is still greater, one thousand to three thousand points, but the vesicles are by no means well formed, and virus thus taken should always be tested on children before being issued. It cannot compare with either of the other methods, except as to yield. In skillful hands it is capable of furnishing spore virus, but there is constant danger of the virus containing microbes. The commercial method, which is simply this exaggerated, furnishes most of the irritating virus in use in the West. Its only recommendation is the cheapness of its product. A large profit can be made by selling points thus produced on Texas cattle, at one half of a cent each; accordingly large discounts can be given, and a division of profits can be made with those in public positions, and yet enough remain to make the propagation very profitable. Virus produced by the method used by us cannot, I think, be produced much under 6 cents a point, allowing only for actual cost. It therefore cannot compete, as far as price is concerned, with that produced by any of the other methods.

The objections to all virus taken from large scarifications is that the vesicles are not well defined. The flow of serum is large, but the exact stage of growth of the spore cannot be ascertained readily. Consequently virus containing microbes, and consequently producing irritating constitutional as well as local effects, will often be issued. With regard to the activity and keeping qualities of our virus, Dr. Winslow Anderson writes me that he has obtained a "beautiful vesicle" from a point fifty days old,

kept most of the time in his office. I have also obtained typical vesicles in virus fifty-eight, ninety, and one hundred and fifty days old.

In concluding this report, I would ask if it is desirable that a vaccine station should exist on this coast, and if so if it shall supply the very best virus without regard to cost, or the best virus "for the money." There is only one way to give confidence to the public in the first named or germ virus and at the same time to be certain that it only is issued. In my opinion the vaccine station should be owned by the State, or else under its supervision. If in private hands its product should be tested and its processes inspected. In return its virus should alone be used by the State, who should have a direct interest in its success. So far, as we have already said, we have made virus that is active, keeps well as far as tested, and produces little local or constitutional irritation, but in doing this we have lost \$1,000 on twenty-five thousand points sold. As this is about the cost of our "plant," which we still have on hand, it perhaps should not be all charged as lost. Against this, however, several months' constant attention of Mr. Sheppard and myself is to be charged, as every point has been taken and packed under the immediate supervision of one or the other of us.

VITAL STATISTICS, AND THE TRUE COEFFICIENT OF MORTALITY, ILLUSTRATED BY CANCER.

By JOHN LE CONTE.

Mankind, when studied in numbers sufficiently large to eliminate accidental and individual peculiarities, possess certain *common qualities or properties*, which vary according to *determinable laws*. For example, the ratio of the sexes at birth, their relative weight at the same epoch, their gradual growth until the period of maturity, their attainment of a certain mean age, and their liability to death from various causes, are found to observe *fixed laws*; they are always the same under the same circumstances. It is the enumeration, systematization, and generalization of these facts that constitute what has been happily designated by the illustrious Laplace.

VITAL STATISTICS.

Until comparatively recent times, physicians do not appear to have sufficiently appreciated and employed the valuable instrument of statistical calculation. It is probably, only by the assistance of such an exact test, that we shall eventually arrive at fixed conclusions respecting the efficacy of different modes of treating disease, and the prognosis to be formed regarding the probable issue of various maladies. In the history of the more demonstrative sciences, it will be found that it is the introduction and use of *accurate numerical measures* that forms the prelude to the epoch of rapid advancement. The theory of gravitation in astronomy, that of definite proportions in chemistry, and that of luminiferous undulations in optics, are all *numerical* theories, susceptible of mathematical expression. There is, of course, no *absolute certainty* beyond the pale of pure mathematics, as probabilities pertain even to the most perfect of the mixed mathematical sciences; nevertheless, the extent to which any science admits of the application of numbers may be regarded as a fair measure of its *exactness*.

In respect of a single individual, or a small number of persons, the uncertainty of the duration of life is proverbial. But the case is entirely changed when *multitudes* are concerned: and there are few classes of contingent events of which the results can be predicted with so little risk of departure from the truth, as the average age to which the lives of a considerable number of persons will be prolonged. Various as are the causes operating in the production of disease, it is now demonstrated that mortality is subject to a *law*, the operation of which is scarcely less regular and certain than that of gravitation. Deaths and their causes are scientific facts, admitting of mathematical analysis, and medicine, like other natural sciences, is beginning to substitute numerical expressions for crude hypotheses and vague conjectures. Our existing means of observation, and the present state of mathematical analysis, are still too imperfect to enable us to trace the elements of the human body through the cycle of organization, but these same obstacles are encountered even when dealing with the inorganic atoms of chemistry and the multifarious phenomena of meteorology.

In this, as in all genuine sciences, our knowledge becomes real and scientific only in so far as it is *verified* in particular facts, and thus established in *general propositions*.

Of late years such advances have been made in the science of pathology, and the systems of registrations have been so much improved, that we may reasonably hope, before long, to secure results of the most interesting and useful import to the medical philosopher. Indeed, on many important points valuable deductions have already been drawn from the discussions of statistics of mortality. But it appears to me that in discussing the *available statistical data*, medical writers have *failed to obtain from them the true value of the facts contained in the numbers*. It is to this aspect of the subject that I desire to direct the attention of the medical profession of this country. The *specific point* to which attention is drawn is the *necessity of estimating the relative tendency to special diseases, by comparing the mortality with the number of persons living*.

In comparing the general mortality of different countries and cities, this method is usually adopted, and most valuable results have thus been secured. But when the *relative mortality from different diseases* is discussed, it is usual to make the *total mortality* the basis of comparison. Such estimates may give rise to the most *erroneous* conclusions. For example, in London, during the last century, the total mortality has decreased from one in twenty to one in forty of the entire population at the two extreme periods. Hence, assuming the number of deaths from some special disease to the number *living* to have been *constant* during this time, the proportional results deduced from a comparison of the total mortality at the end of the century with the number dying from this particular disease at the same epoch, would apparently indicate a *duplication* of the mortality from this disease in one hundred years; when, in fact, there had been no *real* alteration.

In like manner in discussing the influence of *age* on the mortality from any given disease, it is very common to prepare tables of the number of deaths at each age; and, in some instances, these numbers have been assumed to represent the *relative tendency* to the disease at different ages. This is a very serious error; for it must be borne in mind that the number of persons *living* at different ages is very far from being *equal*.

Writers on "Vital Statistics" need to be reminded in relation to the correct method of discussing the mortuary data. As already indicated, the specific point to which attention is drawn is the necessity of estimating the relative mortality from special diseases by comparing the number of deaths from the given cause with the number of persons living at the ages embraced in the record; instead of making the comparison (as is usually done) with the total deaths from all causes, or with the total number of persons living at all ages.

Indeed, it is so self-evident—so axiomatic—that the true *coefficient of mortality* from any given disease, is expressed by the *ratio* of the number of persons *dying* from the specified disease at the given age, to the number of persons *living* at the same age, that it seems most extraordinary that those medical men whose function it is to discuss mortuary statistics, have, in a great measure, neglected to make this ratio the basis of the comparative mortality from different diseases in different countries and in different cities.

Even in estimating the *general mortality* by comparing the total annual deaths with the number of persons living at all ages, *misleading results* may be deduced from such figures. Thus, the apparent *low* general mortality of San Francisco, as compared with several eastern cities, is, with-

out doubt, due to the *abnormal* condition of its population; to the larger proportion of *adults* as compared with *children*; for the mortality among adults is always low as compared with children. Hence, the general mortality in relation to the whole population comes out *abnormally low*. It will be seen hereafter that this result so flattering to our self-sufficiency is by no means sustained by the application of more correct methods of comparison. Moreover, when *age* comes in as an important element in the mortality from specific diseases, as estimated by the number of deaths from the given disease, compared with either the total number of deaths or with the total number of persons living at all ages, the seriously misleading character of the figures thus deduced becomes truly appalling, especially when the population has not attained its normal condition. But, under no circumstances, do the ratios thus obtained express the true *coefficient of mortality* from the given disease or the relative tendency of such disease to destroy human life.

To illustrate this point, let us take *Cholera Infantum*. How erroneous and misleading it would be to estimate the relative mortality from this disease in the city of San Francisco, as compared with that in eastern cities, by the ratio of the deaths from this disease, either to the total deaths, or to the total population of the cities respectively compared. It is obvious that the true coefficient of mortality for cholera infantum, in any case (whether the population is normal or abnormal), is expressed by the *ratio of the number of deaths from this disease to the number of persons liable to be attacked by it*. In the foregoing example this would be indicated (sensibly) by the ratio of the number of deaths from cholera infantum to the number of children living under three years of age. This is an *extreme case*, but it furnishes a *glaring instance* of the *fallacy* of estimating the relative mortality from infantile diseases in different countries or cities, from the ratio of the number of annual deaths from such diseases to the total deaths from all causes, or to the total population living at all ages. But in all cases the ratio of the number of deaths at any age to the number of persons living at that age furnishes a correct expression for the relative mortality at the given age—that is the *real coefficient* of mortality, independently of the distribution of population at different ages.

These considerations are so self-evident, that there must be some reason why mortuary statistics have not universally been discussed from this point of view, instead of the fallacious and misleading one which has been indicated. In reply to letters of inquiry in relation to this point, I have been informed that it is impossible to obtain the statistics of the number of persons living at each age or period of life. But, it seems to me that this difficulty is greatly exaggerated—that it is by no means insuperable, and should not interfere with the application of the correct method to our mortuary records. This will be apparent from the following considerations:

1. The national census, which is taken every *ten years*, should furnish trustworthy estimates for that year of the number of persons living and dying at each age, or, at any rate, of the number living and dying at each quinquennial or decennial period of life. And the successive censuses give us the *rate of increase* of population at each period of life; so that the number of persons living at each period of life during the years intervening between the censuses may be *estimated* with sufficient approximation to accuracy for the purposes under consideration, while the annual death records will furnish the mortuary data.

2. The school census, which is taken every year, furnishes a trustworthy enumeration of the youths living at each age, from birth to seventeen years of age; and this is precisely the period of life in which the increase

of population is most uncertain, and, consequently, the estimates, based upon the successive national censuses, are liable to be most inaccurate. For *adults*, the data furnished by the United States census are sufficiently accurate to enable us to estimate for each intervening year the number of persons living at each age.

It thus appears to be evident that the vital and mortuary statistical data required for computing the true coefficient of mortality for each disease at each age can be obtained with sufficient accuracy for making the comparisons for different countries and cities alike trustworthy and instructive. The only real obstacle in the execution of the project is the persistent attention, care, time, and labor required in the performance of the arithmetical operations for deducing the numerical ratios. This is, indeed, a most serious difficulty; but I am quite sure that there are those to be found in the ranks of the medical profession who possess that combination of intelligence, leisure, and tenacity of purpose requisite for undertaking such an arduous task. One thing is absolutely certain, viz.: That the rich and precious mortuary data, which for many years have been accumulating, must remain comparatively barren in instructive deductions until this gigantic statistical labor is performed.

GENERAL MORTALITY FROM ALL CAUSES AT DIFFERENT AGES.

As a slight foretaste of the character and results of such statistical work, I herewith submit to the consideration of the reader the numerical data collected in Table I, relating to the United States and to twenty-four of the States. The numerical data in the columns headed "Living in 1870," and "Deaths in 1870," are taken from the "Federal Census" for the year 1870. The deduced numbers in the successive columns headed "Deaths in One Thousand Living" are obtained by dividing one thousand times the number of deaths at the giving period of life by the number living at the corresponding period: in other terms, the numbers in these columns are equal to one thousand times the *mean coefficient* of mortality from all causes at the given period of life. In early life, the mortality decreases so rapidly and so *irregularly* with increasing age, that the *quinquennial* interval is too large to secure accurate mean coefficients from birth to five years of age; but the error is comparatively slight, and does not influence *relative* proportions. Of course, the *shorter* the vital and mortuary intervals, the more accurate would be the deduced coefficients; and, for scientific purposes, it would be desirable to have the interval as small as *one* year. The census furnished the data for intervals from one to two, two to three, three to four, and four to five years of age; but it is not deemed important or necessary to make this amplification of the table. And for similar reasons, the computations have not been extended beyond the age of thirty years. I have restricted my statistical researches to the *white* population, for the obvious reason that the data in the census in relation to the *colored* population are notoriously untrustworthy.

TABLE I.
White Population—Census for 1870.

STATES.	AT ALL AGES.			FROM 0 TO 1 YEARS.			FROM 0 TO 5 YEARS.			FROM 5 TO 10 YEARS.		
	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.
United States	33,580,377	424,140	12.63	947,309	94,555	99.81	4,719,792	187,636	39.76	4,151,715	22,178	5.34
1. Alabama	521,384	4,737	9.09	15,055	723	48.02	77,249	1,441	18.87	66,168	255	3.85
2. California	499,424	8,427	16.87	13,317	1,788	134.26	66,742	3,382	50.67	60,180	562	9.34
3. Connecticut	527,549	6,670	12.64	11,794	1,101	93.35	57,615	1,895	32.89	52,130	273	5.24
4. Georgia	638,926	6,368	9.97	18,993	1,264	66.55	96,530	2,285	32.67	79,678	343	4.30
5. Illinois	2,511,096	33,312	13.28	78,442	9,150	116.65	386,486	16,808	43.49	336,435	2,121	6.30
6. Indiana	1,655,837	17,320	10.46	50,271	3,818	75.95	249,689	7,151	28.64	226,346	958	4.23
7. Kentucky	1,098,692	11,311	10.30	34,976	2,842	81.26	172,352	4,624	26.83	152,687	501	3.28
8. Louisiana	362,065	7,593	20.97	10,885	1,732	159.12	53,022	2,830	53.37	45,010	339	8.18
9. Maryland	605,497	7,446	12.30	16,941	1,576	93.03	83,052	3,140	37.81	74,714	389	5.21
10. Massachusetts	1,443,156	25,487	17.66	32,673	5,178	158.48	156,460	9,058	58.33	138,706	980	7.07
11. Michigan	1,167,282	10,910	9.35	32,108	2,507	77.93	161,910	4,458	27.53	143,849	585	4.07
12. Mississippi	382,896	3,712	9.70	12,051	672	55.76	59,574	1,264	21.22	47,190	222	4.70
13. Missouri	1,603,146	26,256	16.38	51,221	6,689	130.20	258,378	12,878	49.84	222,503	1,639	7.50
14. New Hampshire	317,697	4,281	13.48	5,731	486	84.80	29,622	931	31.43	28,171	142	5.04
15. New Jersey	875,407	10,139	11.58	24,083	2,389	99.20	115,869	4,504	38.87	102,593	560	5.46
16. New York	4,330,210	67,709	15.64	102,815	15,240	148.42	515,339	27,601	53.56	478,673	2,939	6.14
17. North Carolina	678,470	6,087	8.97	18,466	1,068	57.84	97,807	1,930	19.73	83,531	252	3.02
18. Ohio	2,601,946	28,494	10.95	73,787	6,361	86.21	396,540	11,314	30.87	328,912	1,220	3.71
19. Pennsylvania	3,456,069	50,973	14.75	97,679	11,858	121.40	484,736	22,421	46.25	425,529	2,977	7.00
20. South Carolina	289,637	2,445	8.41	7,693	382	49.66	41,158	730	17.74	34,715	132	3.80
21. Tennessee	936,119	9,778	10.45	29,173	2,188	75.00	147,320	3,733	25.31	123,409	441	3.57
22. Vermont	329,613	3,537	10.73	7,104	529	74.47	37,251	919	24.67	34,339	143	4.16
23. Virginia	712,689	7,532	10.58	20,043	1,647	82.17	100,956	2,803	27.76	83,701	280	3.35
24. Wisconsin	1,051,251	9,914	9.43	30,940	2,210	71.43	156,648	4,415	28.19	145,522	651	4.47

TABLE I—Continued.

STATES.	FROM 10 TO 15 YEARS.			FROM 15 TO 20 YEARS.			FROM 20 TO 25 YEARS.			FROM 25 TO 30 YEARS.		
	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.	Living in 1870.	Deaths in 1870.	Deaths in 1,000 Living.
United States	4,136,461	12,815	3.10	3,511,036	16,402	4.67	3,225,928	21,465	6.64	2,681,552	19,283	7.19
1. Alabama	76,361	237	3.10	64,407	269	4.18	56,335	321	5.69	37,692	243	6.45
2. California	49,523	221	4.46	33,976	217	6.39	39,584	316	7.98	46,871	428	9.13
3. Connecticut	54,133	201	3.71	50,313	233	4.63	49,471	355	7.18	44,049	323	7.23
4. Georgia	91,489	284	3.10	70,992	329	4.27	68,745	370	5.38	45,865	286	5.58
5. Illinois	318,948	1,088	3.41	257,958	1,231	4.77	238,336	1,469	6.16	203,179	1,382	6.80
6. Indiana	230,420	569	2.58	184,820	823	4.45	156,897	985	6.28	125,337	811	6.46
7. Kentucky	147,392	417	2.83	122,175	510	4.17	107,352	677	6.31	81,490	526	6.45
8. Louisiana	48,276	241	4.89	39,935	275	6.89	35,032	395	11.28	28,168	421	14.95
9. Maryland	73,904	212	2.87	65,051	256	3.94	55,967	319	5.70	47,444	300	6.32
10. Massachusetts	147,149	591	4.02	140,036	953	6.78	142,556	1,354	9.50	128,756	1,327	10.31
11. Michigan	138,428	367	2.65	117,502	484	4.12	93,697	575	6.14	100,035	510	5.10
12. Mississippi	53,646	145	2.70	46,524	211	4.54	42,354	262	6.19	28,962	187	6.46
13. Missouri	210,479	853	4.05	167,256	1,028	6.13	135,285	1,313	8.46	130,009	1,128	8.58
14. New Hampshire	31,808	97	3.05	31,479	193	6.13	29,235	262	8.96	24,448	185	7.37
15. New Jersey	100,344	231	2.30	82,276	289	3.50	80,647	412	5.11	73,794	388	5.26
16. New York	478,639	1,494	3.12	428,552	2,032	4.79	408,680	3,113	7.62	361,339	3,031	8.75
17. North Carolina	92,349	214	2.32	78,441	300	3.82	70,216	350	4.98	46,296	234	5.05
18. Ohio	326,746	734	2.25	281,482	1,124	3.17	247,093	1,448	5.85	201,006	1,350	6.72
19. Pennsylvania	415,580	1,409	3.39	361,231	1,582	4.38	330,290	2,192	6.64	278,948	2,110	7.56
20. South Carolina	39,223	101	2.58	33,473	117	3.50	30,682	117	3.81	21,004	108	5.14
21. Tennessee	128,075	349	2.72	107,449	505	4.70	96,918	653	6.74	69,016	536	7.77
22. Vermont	34,854	99	2.84	33,587	148	4.41	29,327	169	5.76	24,845	133	6.16
23. Virginia	93,060	197	2.12	79,093	276	3.49	70,820	300	5.08	51,493	319	6.20
24. Wisconsin	139,610	387	2.77	110,162	412	3.74	87,029	414	4.76	70,234	351	5.90

In Table II, the computed results contained in Table I are segregated, and the States are arranged in the order of increasing magnitude of the death rate per one thousand living between birth and five years of age. The results indicated in this table are somewhat unexpected and surprising; but they are nevertheless quite significant. The order of States strikingly exhibits the fact that *density of population*, or *urban life*, is the controlling element in determining the magnitude of the coefficient of mortality among children under five years of age. Those States having the greatest number of populous cities and towns have the *highest death rate*, and stand *lowest* on the list. The position of Vermont (No. 6) clearly shows that the severity of winter climate is quite subordinate to other mortuary influences. A glance at the numbers in the column headed "0 to 1 year," reveals nearly the same order for the magnitude of the death rate for infants under one year of age, as for children under five years of age.

TABLE II.

Deaths in 1870, per One Thousand Living at Quinquennial Periods of Life.

States arranged in order of increasing magnitude of death-rate between birth and 5 years of age, or 0 to 5 years.

STATES.	All Ages.	0 to 1 Years.	0 to 5 Years.	5 to 10 Years.	10 to 15 Years.	15 to 20 Years.	20 to 25 Years.	25 to 30 Years.
United States -----	12.63	99.81	39.76	5.34	3.10	4.67	6.64	7.19
1. South Carolina -----	8.44	49.66	17.74	3.80	2.58	3.50	3.81	5.14
2. Alabama -----	9.08	48.02	18.87	3.85	3.10	4.18	5.69	6.45
3. North Carolina -----	8.97	57.84	19.73	3.02	2.32	3.82	4.98	5.05
4. Mississippi -----	9.70	55.76	21.22	4.70	2.70	4.54	6.19	6.46
5. Georgia -----	9.97	66.55	23.67	4.30	3.10	4.27	5.38	5.58
6. Vermont -----	10.73	74.47	24.67	4.16	2.84	4.41	5.76	6.16
7. Tennessee -----	10.45	75.00	25.34	3.57	2.72	4.70	6.74	7.77
8. Kentucky -----	10.30	81.26	26.83	3.28	2.83	4.17	6.31	6.45
9. Michigan -----	9.35	77.93	27.53	4.07	2.65	4.12	6.14	5.10
10. Virginia -----	10.58	82.17	27.76	3.35	2.12	3.49	5.08	6.20
11. Wisconsin -----	9.43	71.43	28.19	4.47	2.77	3.74	4.76	5.00
12. Indiana -----	10.46	75.95	28.64	4.23	2.58	4.45	6.28	6.46
13. Ohio -----	10.95	86.21	30.87	3.71	2.25	3.17	5.85	6.72
14. New Hampshire -----	13.48	84.80	31.43	5.04	3.05	6.13	8.96	7.57
15. Connecticut -----	12.64	93.35	32.89	5.24	3.71	4.63	7.18	7.23
16. Maryland -----	12.30	93.03	37.81	5.21	2.87	3.94	5.70	6.32
17. New Jersey -----	11.58	99.20	38.87	5.46	2.30	3.39	5.11	5.26
18. Illinois -----	13.28	116.65	43.49	6.30	3.41	4.77	6.16	6.80
19. Pennsylvania -----	14.75	121.40	46.25	7.00	3.39	4.38	6.64	7.56
20. Missouri -----	16.38	130.20	49.84	7.50	4.05	6.15	8.46	8.58
21. California -----	16.87	134.26	50.67	9.34	4.46	6.39	7.98	9.13
22. Louisiana -----	20.97	159.12	53.37	8.18	4.99	6.89	11.28	14.95
23. New York -----	15.64	148.42	53.56	6.14	3.12	4.79	7.62	8.75
24. Massachusetts -----	17.66	158.48	58.33	7.07	4.02	6.78	9.50	10.31

It is noticed, with regret, that the position of California (No. 21) indicates a *high* coefficient of mortality among children, which ill accords with the reiterated boast of the superior salubrity of its climate. To some extent, doubtless, this high mortality among children may be due to the large fraction of the population of the State which is crowded into the City of San Francisco. Nevertheless, it may be proper to add, that California ranks comparatively *high* in its death rate at *all periods* of life, as may be seen by an inspection of the numbers in Table II. This significant fact must warn us that our State affords a proper domain for the rational application of sanitary regulations.

The position of Louisiana is exceptional, especially in its high mortality among *adults*. This is probably due to the large mortuary influence of the City of New Orleans.

It would be interesting as well as instructive to compare, in a detailed manner, the above results, with those deduced from the census of 1880. The annexed supplementary *table*, relating to mortality under five years of age in *eight* States, seems to indicate a *higher* mortality in all of them in 1880, as compared with 1870, with the *exception* of California and Louisiana. Perhaps the obvious disparity in the numbers deduced from the two census returns may be due to improved registration of both the living and the dead:

White Population.—Census of 1880.

STATES.	Living Under 5 Years in 1880.	Deaths Under 5 Years in 1880.	Deaths in 1,000 Living in 1880.	Deaths in 1,000 Living in 1870.	Deaths in 1,000 Living at all Ages in 1880.	Deaths in 1,000 Living at all Ages in 1870.
Alabama	110,802	3,291	29.70	18.87	12.58	9.08
North Carolina	138,079	5,081	36.81	19.73	14.03	8.97
Georgia	133,993	4,334	32.34	23.67	12.48	9.97
Vermont	33,972	1,208	35.56	24.67	15.12	10.73
California	90,537	3,258	35.99	50.67	13.64	16.87
Louisiana	69,794	2,415	34.60	53.37	15.47	20.97
New York	552,167	32,763	59.52	53.56	17.28	15.64
Massachusetts	177,225	11,415	64.41	58.33	18.55	17.66

MORTALITY FROM SPECIAL DISEASES.

As previously indicated, it is in estimating the mortality from *special causes* that the fallacy of the ordinary methods is most conspicuous and misleading. In relation to special diseases, it is customary to compare the number of deaths from the given malady with the total deaths from all causes, or with the total number of persons living at all ages. We have already shown that the proportional numbers thus deduced do not accurately represent the relative tendency of such disease to destroy human life; but that the true *coefficient of mortality* for any given malady is expressed by the *ratio* of the number of *deaths* from the given disease at the given age to the number of persons *living* at the same age. Of course, the fallacy of the ordinary methods of comparison is most conspicuous and striking, when *age* is the controlling element in the liability to attack from the specified disease. In such cases, the correct relative coefficient of mortality is expressed by the number of deaths from the given disease at the given age, in every one thousand persons living at the same age. Thus, for example, phthisis and cancer are essentially diseases of *adult life*; and consequently, it would be manifestly fallacious to estimate the mortality from either of them by comparing the number of deaths with the total number of persons living at all ages, instead of the number of *adults* living.

In illustrating the importance of taking the number of persons living at each age as the basis of comparison in estimating mortality, I have, for several reasons, selected CANCER:

First—Because, in relation to the influence of *age*, it furnishes an *extreme case*, and thus affords a *glaring* illustration of the fallacy of the customary methods of estimating mortality.

Second—Because, in relation to *sex*, and in several other respects, it furnishes an interesting example of mortuary researches.

Third—Because much of the arithmetical portion of the work (by no means an insignificant labor) was performed by me many years ago, so that the population estimates, as well as the numerical comparisons, are at

hand* It would, doubtless, have been more satisfactory to have included in this discussion the rich and precious vital and mortuary data which have accumulated since these calculations were executed, and to have embraced *other* diseases in the investigations; but the development of this interesting field of research must be reserved for the industry of future statistical investigators. In the meantime, CANCER will serve to illustrate the point to which attention is specifically directed.

1. AGE.—The mortuary data, illustrating the influence of *age* on the development of *Cancer*, are drawn from a memoir, presented to the Academy of Sciences of Paris during the year 1843, by M. TANCHOU. (*Gazette des Hopitaux*, for July 6, 1843.) It embraces nine thousand one hundred and eighteen deaths from cancer, which occurred in the Department of the Seine, in France, during the *eleven* years from 1830 to 1840, inclusive. These mortuary data are collected in the following TABLE, from which many instructive deductions may be drawn.

TABLE III.

AGE.	DEATHS FROM CANCER IN ELEVEN YEARS.			MEAN ANNUAL DEATHS FROM CANCER (COMPUTED).			Ratio of Males to Females.
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	
1 to 10 years ----	9	14	23	0.818	1.273	2.091	1 to 1.55
10 to 20 years ----	13	13	26	1.182	1.182	2.364	1 to 1.00
20 to 30 years ----	62	169	231	5.636	15.364	21.000	1 to 2.73
30 to 40 years ----	190	822	1,012	17.273	74.727	92.000	1 to 4.33
40 to 50 years ----	339	1,636	1,975	30.818	148.727	179.545	1 to 4.82
50 to 60 years ----	488	1,620	2,108	44.364	147.273	191.637	1 to 3.32
60 to 70 years ----	598	1,469	2,067	54.364	133.545	187.909	1 to 2.46
70 to 80 years ----	398	917	1,315	36.182	83.364	119.546	1 to 2.30
80 to 90 years ----	62	273	335	5.636	24.818	30.454	1 to 4.40
90 to 100 years ---	4	22	26	0.364	2.000	2.364	1 to 5.50
All ages -----	2,163	6,955	9,118	196.636	632.273	828.909	1 to 3.215
20 to 100 years ---	2,141	6,928	9,069	194.636	629.818	824.454	1 to 3.236

From this table we learn the number of persons dying from cancer at each specified period of life; but, as previously intimated, we are by no means warranted in the conclusion which might seem to follow, viz.: that these numbers represent the *relative tendency* to this disease at different ages. This is a most serious error into which many writers frequently fall, when treating of the influence of *age* on the development of diseases. It must be borne in mind that the number of persons *living* at different ages is very unequal. For instance, it appears from the table that one thousand six hundred and twenty females died from cancer between the ages of fifty and sixty, while only nine hundred and seventeen perished from the same cause between the ages of seventy and eighty; but, if the number of females *living* of the former age were somewhat more than *double* that of those alive of the latter age, the *true* proportional mortality at both decennial periods of life would have been nearly *equal*.

In order, therefore, to ascertain with accuracy whether particular ages exercise any influence on the development of the disease, we must com-

* *Vide*, Monograph by the author, entitled "Statistical Researches on Cancer." "Southern Med. and Surg. Journal," new series, vol. 2, pp. 257 to 293, May, 1846.—*Also*, "Vital Statistics: Illustrated by the Laws of Mortality from Cancer." "Western Lancet," vol. 1, No. 3, pp. 176-189, March, 1872.—*Also*, "The True Coefficient of Mortality." "Nature," vol. 24, No. 616, p. 357, August 18, 1881.

pare absolute mortality at each age with the number of persons *living* at those ages. As the mortuary records under consideration extend through a period of eleven years, we are not warranted in assuming that the population was *stationary* during this time; but, we may assume, without sensible error, that the population of the Department of the Seine, according to the enumeration of 1836, is a fair estimate of the *average* number living during the eleven years from 1830 to 1840, inclusive. Now, the population of the Department of the Seine (embracing Paris and the *arrondissements* of Sceaux and St. Denis) was, in 1836, one million one hundred and six thousand eight hundred and ninety-one. Assuming the proportional numbers of the sexes to be the same as they were in England about this period, and we have five hundred and forty thousand seven hundred and thirty-eight males and five hundred and sixty-six thousand one hundred and fifty-three females. Again, assuming the number of persons of each sex living at each age in France to be in the same proportion as in England in 1841, and we are furnished with the data required for computing the results embraced in the following table. The numerical elements of Table III are of course used in the calculations. The English estimates of the number living at each age are furnished by census of 1841, and may be found in the American Almanac for 1846.

TABLE IV.

AGE.	ESTIMATED NUMBER LIVING.			MEAN ANNUAL DEATHS FROM CANCER IN 1,000 LIVING.		
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.
Under 10 years.....	139,186	139,840	279,026	0.00588	0.00910	0.00749
10 to 20 years.....	115,556	115,269	230,825	0.01023	0.01026	0.01024
20 to 30 years.....	92,736	104,342	197,078	0.06078	0.14725	0.10655
30 to 40 years.....	69,485	73,203	142,688	0.24858	1.02081	0.64476
40 to 50 years.....	52,073	54,124	106,197	0.59182	2.74788	1.69068
50 to 60 years.....	34,607	36,800	71,407	1.28192	4.00198	2.68372
60 to 70 years.....	22,928	25,703	48,631	2.37111	5.19564	3.86399
70 to 80 years.....	11,085	12,852	23,937	3.26399	6.48659	4.99417
80 to 90 years.....	2,866	3,680	6,546	1.96669	6.74408	4.65239
90 to 100 years.....	216	340	556	1.68110	5.88769	4.25114
All ages.....	540,738	566,153	1,106,891	0.36364	1.11679	0.74886
20 to 100 years.....	285,996	311,044	597,040	0.68055	2.02439	1.38077

The foregoing table demonstrates the *inaccuracy* of the prevailing opinion, that the tendency to cancer is at its *maximum* between the ages of thirty-five and fifty years. The abrupt augmentation of *general* female mortality between the ages of forty and fifty, when taken in connection with the equally sudden diminution of the intensity of fecundity among women at the same epoch of life (as exhibited in the Swedish tables), has been supposed to lend support to the validity of the current opinion, respecting the proclivity to uterine and mammary cancer, during the declining activity and cessation of the reproductive functions. But Table IV shows, on the contrary, that, in both sexes, the true coefficient of mortality from cancer goes on steadily augmenting with each succeeding decade until the eightieth year, and among females until the ninetieth; after that period, the number of cases is probably too small to furnish any reliable comparison. No *sudden and abrupt* alteration of the law of mortality from cancer in the sexes is here exhibited at that critical period of life. In fact, the greatest *increase* of death rate among females takes place between twenty and

thirty, when the intensity of fecundity is probably at its *maximum*. Indeed, after twenty-five or thirty years of age, the *rate of increase* of the death rate with advancing life is *remarkably uniform* among *females* up to eighty; the *average* of these five decennial periods being about 1.30 per one thousand living for *each decade*. Among *males* the increase is not so regular; arising, probably, from the smaller numbers embraced in our statistical data.

The numbers in the following table will illustrate several points in relation to the proper method of estimating the mortality from cancer. The numerical data of Tables III and IV are used in the computations.

TABLE V.

(1) AGES—YEARS.	(2) NUMBER LIVING.		(3) MEAN ANNUAL DEATHS FROM CANCER.		(4) ANNUAL DEATHS FROM CANCER IN 1,000 LIVING AT ALL AGES.		(5) ANNUAL DEATHS FROM CANCER IN 1,000 LIVING AT EACH AGE.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Under 10 years	139,186	139,840	0.818	1.273	-----	-----	-----	-----
10 to 20 years	115,556	115,269	1.182	1.182	-----	-----	-----	-----
20 to 30 years	92,736	104,342	5.636	15.364	0.0104	0.0271	0.0608	0.1473
30 to 40 years	69,485	73,203	17.273	74.727	0.0319	0.1320	0.2486	1.0208
40 to 50 years	52,073	54,124	30.818	148.727	0.0570	0.2627	0.5918	2.7479
50 to 60 years	34,607	36,800	44.364	147.273	0.0824	0.2601	1.2819	4.0020
60 to 70 years	22,928	25,703	54.364	133.545	0.1005	0.2359	2.3711	5.1956
70 to 80 years	11,085	12,852	36.182	83.364	0.0639	0.1508	3.2640	6.4866
80 to 90 years	2,866	3,680	5.636	24.818	0.0104	0.0438	1.9667	6.7441
90 to 100 years	216	340	0.364	2.000	0.0007	0.0035	1.6811	5.8877
All ages ----	540,738	566,153	196.636	632.273	0.3636	1.1168	0.3636	1.1168
20 to 100 years	285,996	311,044	194.636	629.818	-----	-----	0.6806	2.0244

The numbers in columns (3) and (4) in the foregoing table might seem to support the popular idea that the mortality from cancer attains its maximum between the ages of forty and sixty years; but, as we have previously shown, the numbers in column (5) are evidently the *true indices* of the relative tendency to this disease at different ages; and it will be observed that the death-rate per one thousand living at each age among females goes on steadily augmenting with each succeeding decade of age up to ninety years. A glance at the numbers in columns (4) and (5) is sufficient to illustrate the fallacy of estimating the *relative tendency* to cancer at different ages by the ratio which the annual deaths from it at each age bears to the *total* population living, instead of the number living *at each age*. These facts may be expressed *graphically*, according to the method of analytical geometry, as represented in annexed *diagrams*.

In these diagrams the lengths of the horizontal lines indicate (on the scales above given) the proportional numbers in columns (4) and (5) in Table V. A comparison of the two diagrams renders manifest to the eye the fallacy and misleading character of the method of estimating the mortality from cancer at different ages in the manner represented by the diagram on the *left*. It is obvious that the same fallacy is involved in every method of estimating the influence of *age* on mortality by comparing the number of deaths at each period of life with any *fixed numerical quantity*. Hence, in deducing the influence of *age* on the *death-rate*, the following methods give *fallacious* results:

(1.) The *relative number* of deaths at each period of life.

(2.) The *ratio* of the number of deaths from the *given cause* at *each age*, to the *total* number of deaths from the *same cause*, in the same population and at the same epoch.

(3.) The *ratio* of the number of deaths from the *given cause* at *each age*, to the *total* number of deaths from *all causes* in the same population and at the same epoch.

(4.) The *ratio* of the number of deaths from the *given cause* at *each age*, to the *total* population living at *all ages* and at the same epoch.

In the case of cancer, *each* of the foregoing *fallacious* methods, when represented by a *graphic projection*, would form a diagram similar to that on the *left*.

The fact likely to be most strongly impressed on the reader by the numbers in column (5) of Table V, as well as the delineation in the diagram on the *right*, is the remarkable *regularity* of the *increase* of the coefficient of mortality from cancer with advancing life among *females* after the age of twenty-five or thirty years. After seventy-five or eighty years of age the law appears to be disturbed by irregularities; but this probably arises from the fact that the number of cases after this epoch is too *small* to admit of useful comparison. Between the ages of twenty-five and seventy-five years the mortality increases nearly in *arithmetical progression* as the *age augments in arithmetical progression*; the *mean increment* being about 1.30 per one thousand living at each age for each *decade* of advancing life, or about 0.13 per one thousand living at each age for each *yearly* increase of age. Since the mortality augments in arithmetical progression, it follows that the *average* mortality *between* twenty and thirty equals mortality at twenty-five; mortality *between* thirty and forty equals mortality at thirty-five, and so on up to the age of seventy-five. Assuming this to be the *law* of mortality from cancer among *females* in the Department of the Seine, it admits of very simple mathematical expression. Thus, let—

A=Age (in years) at which the *liability* to cancer *begins*;

Á=Any age (in years) *greater* than A;

K=A *constant numerical coefficient*; probably *variable* according to *country*, state of *civilization*, *density* of population, *race*, etc.;

M=Annual mortality per one thousand living at age Á.

Then, we have, $M=K \times (\acute{A}-A)$.

To apply this formula to the statistical data embraced in Tables IV and V, let us assume that the *liability* to cancer *begins* at the age of twenty-five years—that is, $A=25$ years, and that $K=0.13$. Then our formula becomes:

$$M=0.13 \times (\acute{A}-25).$$

The accordance of the results given by this formula with the numbers given in the tables is exhibited in the following numerical comparisons:

AGES.	Values of M. by Tables.	Values of M. by Formula.
25 years -----	0.14	0.00
35 years -----	1.02	1.30
45 years -----	2.74	2.60
55 years -----	4.00	3.90
65 years -----	5.20	5.20
75 years -----	6.49	6.50
85 years -----	6.75	7.80*

* It is evident, that by the *formula*, the broken line a, b, c, d, e, f, g, h, in the diagram on the *right*, would be a *straight line*.

(2.) The *ratio* of the number of deaths from the *given cause* at *each age*, to the *total* number of deaths from the *same cause*, in the same population and at the same epoch.

(3.) The *ratio* of the number of deaths from the *given cause* at *each age*, to the *total* number of deaths from *all causes* in the same population and at the same epoch.

(4.) The *ratio* of the number of deaths from the *given cause* at *each age*, to the *total* population living at *all ages* and at the same epoch.

In the case of cancer, *each* of the foregoing *fallacious* methods, when represented by a *graphic projection*, would form a diagram similar to that on the *left*.

The fact likely to be most strongly impressed on the reader by the numbers in column (5) of Table V, as well as the delineation in the diagram on the *right*, is the remarkable *regularity* of the *increase* of the coefficient of mortality from cancer with advancing life among *females* after the age of twenty-five or thirty years. After seventy-five or eighty years of age the law appears to be disturbed by irregularities; but this probably arises from the fact that the number of cases after this epoch is too *small* to admit of useful comparison. Between the ages of twenty-five and seventy-five years the mortality increases nearly in *arithmetical progression* as the age augments in *arithmetical progression*; the mean increment being about 1.30 per one thousand living at each age for each *decade* of advancing life, or about 0.13 per one thousand living at each age for each *yearly* increase of age. Since the mortality augments in arithmetical progression, it follows that the *average* mortality *between* twenty and thirty equals mortality at twenty-five; mortality *between* thirty and forty equals mortality at thirty-five, and so on up to the age of seventy-five. Assuming this to be the *law* of mortality from cancer among *females* in the Department of the Seine, it admits of very simple mathematical expression. Thus, let—

A=Age (in years) at which the *liability* to cancer *begins*;

A=Any age (in years) *greater* than A;

K=A *constant numerical coefficient*; probably *variable* according to *country*, state of *civilization*, *density* of population, *race*, etc.;

M=Annual mortality per one thousand living at age A.

Then, we have, $M=K \times (A-A)$.

To apply this formula to the statistical data embraced in Tables IV and V, let us assume that the *liability* to cancer *begins* at the age of twenty-five years—that is, $A=25$ years, and that $K=0.13$. Then our formula becomes:

$$M=0.13 \times (A-25).$$

The accordance of the results given by this formula with the numbers given in the tables is exhibited in the following numerical comparisons:

AGES.	Values of M. by Tables.	Values of M. by Formula.
25 years	0.14	0.00
35 years	1.02	1.30
45 years	2.74	2.60
55 years	4.00	3.90
65 years	5.20	5.20
75 years	6.49	6.50
85 years	6.75	7.80*

* It is evident, that by the *formula*, the broken line a, b, c, d, e, f, g, h, in the diagram on the right, would be a *straight line*.

METEOROLOGICAL TABLE.

The following Table shows the Average Maximum, Minimum, and Mean Temperature per Month, per Year, and for Eleven Years; also, Rainfall for same period. Observations taken three times daily, by W. H. Martin, Druggist.

The foregoing formula represents the law of increasing mortality from cancer among females with advancing age in the *simplest* form, as a *function of the age*. This extreme simplicity is probably *unique* in the case of cancer, and seems to indicate that *age* is so far the controlling element in the development of this disease as to overpower all other causes. In the case of *other* diseases, we cannot expect to escape the necessity of employing those *exponential* functions in investigating their laws of mortality, which are essential when a multiplicity of causes are in operation.

2. SEX.—The *relative mortality*, or the *relative frequency*, of cancer in the two sexes may be learned from Mr. William Farr's valuable reports on the causes of death throughout England and Wales, as likewise from the statistical data furnished by the researches of M. Tanchou, at Paris. As there exists a certain degree of numerical superiority on the side of the female population, in order to make the comparison perfectly fair, it is necessary to calculate the rate of mortality in relation to the numbers living of *each sex*. This has been done in the annexed *table*:

TABLE VI.

COUNTRY.	Year.	ESTIMATED NUMBER LIVING.		ANNUAL DEATHS FROM CANCER.		ANNUAL DEATHS FROM CANCER IN 1,000 LIVING.		RATIO OF MALES TO FEMALES.
		Males.	Females.	Males.	Females.	Males.	Females.	Ratio.
England and Wales	1838	7,469,450	7,829,451	620	1,828	0.0830	0.2335	1 to 2.813
England and Wales	1839	7,572,873	7,932,874	660	2,031	0.0871	0.2560	1 to 2.938
Department of Seine	1830-40	540,738	566,153	197	632	0.3636	1.1168	1 to 3.071
Average								1 to 2.941

It would have been more accurate to have compared the number of deaths from cancer for each sex with the number living between the *cancerable ages* (say between twenty and one hundred years), instead of the number living at *all ages*; but while this more correct method would have nearly *doubled* the coefficient of mortality for each sex, yet the *ratio* would *not* have been *sensibly altered*. The foregoing table shows that in both England and France the annual mortality from cancer among females *exceeds* that among males, nearly in the proportion of three to one. This striking difference in the liability to cancer in the two sexes is the more remarkable from the fact that the average annual mortality from all causes, in the English population, in the five years, 1838-42, was 22.94 per one thousand living among males, while it was only 21.24 per one thousand among females. It is true, the *expectation of life* among women exceeds that of men by about two years; and consequently a greater proportional number of the former live to an *advanced age*, the period of life which, as we have seen, is most obnoxious to cancer. But this is wholly insufficient to account for the vast disparity in the mortality from this disease in the two sexes. For, by comparing the numbers given in column (5) of Table V, it will be seen that the excess is maintained by the females throughout life, even long after the reproductive functions have become dormant. And it is a still more remarkable fact that this *ratio* appears to be *sensibly the same* in England and in France. Although, in the Department of the Seine, in each of the sexes (see Table VI), the mortality from cancer was

more than *four times* as great as it was in England at the corresponding epoch, yet the *constancy of the ratio* between the two sexes is not disturbed. These facts indicate a *law* in relation to the influence of *sex* on the development of cancer, which is as *fixed* and as *uniform* in its operation as that of *age*, and seem to point to certain original and fundamental *physiological differences in the sexes* as the *true causes* of the excess of death from this disease among females. That such connate differences do exist seems to be rendered probable from the fact, noticed by Dr. Emerson, of Philadelphia,* that the diseases most fatal to *male* children seem to be of the *sthenic* class, such as attend upon constitutions in which the energies of organic life are highly exalted; whereas, those which are most destructive with *female* children are of the *asthenic* class, characterized by less energy of the forces of organic life, and greater feebleness of the system. It is obvious that *cancer* appropriately belongs to the *latter* class.

3. SECULAR VARIATION OF MORTALITY.—Whether the mortality, or frequency of cancerous diseases, is on the *increase*, or otherwise, is a question of considerable interest and importance; but one to which a satisfactory reply cannot be furnished, until we have the means of properly ascertaining the proportion of the population annually cut off by this disease during a *long series of years*. A little reflection will show that a numerical comparison between the number of deaths from any given cause, and the total mortality from all causes is *not* an accurate test of the relative frequency of the specified disease at several successive epochs. For, not only is the population a variable element, but the general mortality, as compared with the number living, varies with the increase or decrease of epidemic diseases. The most *accurate test* consists in calculating the ratio of the number of deaths from cancer for each year between the *cancerable* ages, to the number of persons living between the *same ages*. But this more correct method involves such an amount of arithmetical labor, that we must be content with the approximate method of calculating the ratio of the whole number of deaths from cancer for each year, to the total population living at the *same time*; for while the *absolute* coefficient will be different, yet the *relative* mortality at successive epochs will not be *sensibly* disturbed. But to make this comparison for a series of years, it is necessary to know the *rate of increase* of the population in which the mortuary records are kept. The enumerations of 1826 and 1836 furnish the data necessary for estimating the population of the Department of the Seine for successive years, and those of 1831 and 1841 offer similar data for England and Wales. With the aid of the foregoing hints, the mode of computing the following table will be apparent to the reader. The numbers indicating the absolute deaths from cancer in each year were obtained from the Memoirs of Tanchou, and the reports of the Registrar-General of England. The first three proportional numbers for London were taken from McCulloch's "Statistical Account of the British Empire," vol. II, second edition, page 577, London, 1839. They are, however, of little value in relation to the question under consideration.

The numbers relating to Glasgow are computed from the data furnished in Nicol's "Vital, Social, and Economic Statistics of the City of Glasgow, 1881-85," pages 36-44. Those relating to Massachusetts are taken from the report of the Massachusetts State Board of Health for 1886, as cited in "Science," vol. X, page 213, October 28, 1887.

* Vide "Amer. Journal of Med. Sciences," January, 1846, p. 91 et seq.

TABLE VII.

	Years.	Estimated Population.	Annual Deaths from All Causes.	Annual Deaths from Cancer.	Deaths from Cancer in 1,000 Deaths.	Deaths from Cancer in 1,000 Living.
London	1728-57	-----	-----	-----	2.00	-----
London	1771-80	-----	-----	-----	3.40	-----
London	1831-35	-----	-----	-----	4.40	-----
London	1837	-----	-----	-----	-----	0.2080
London	1840-41	-----	80,321	638	7.95	-----
Paris	1830-40	909,126	-----	727	-----	0.8014
Sceaux et St. Denis....	1830-40	197,765	-----	102	-----	0.5407
Department of Seine...	1830	1,049,793	-----	668	-----	0.6363
Department of Seine...	1831	1,059,100	-----	865	-----	0.8167
Department of Seine...	1832	1,068,491	-----	814	-----	0.7618
Department of Seine...	1833	1,077,964	-----	814	-----	0.7551
Department of Seine...	1834	1,087,521	-----	857	-----	0.7880
Department of Seine...	1835	1,097,164	-----	906	-----	0.8258
Department of Seine...	1836	1,110,891	-----	837	-----	0.7562
Department of Seine...	1837	1,116,705	-----	778	-----	0.6967
Department of Seine...	1838	1,126,606	-----	803	-----	0.7128
Department of Seine...	1839	1,136,594	-----	887	-----	0.7804
Department of Seine...	1840	1,146,672	-----	889	-----	0.7753
Department of Seine (Mean)	1830-40	1,110,891	34,805	829	23.82	0.7550
England and Wales	1838	15,307,065	330,559	2,448	7.4056	0.1599
England and Wales	1839	15,511,264	330,497	2,691	8.1423	0.1735
England and Wales	1840	15,718,183	351,757	2,786	7.9202	0.1772
England and Wales	1841	15,927,867	336,664	2,746	8.1565	0.1724
England and Wales	1842	16,140,344	342,774	2,941	8.5800	0.1822
England and Wales	1860	19,902,713	422,721	6,827	16.1501	0.3430
England and Wales	1861	20,119,314	435,114	7,276	16.7221	0.3616
England and Wales	1862	20,336,467	436,566	7,396	16.9413	0.3637
England and Wales	1863	20,554,137	473,837	7,479	15.7839	0.3639
Glasgow	1881-84	526,000	-----	246	-----	0.4678
Massachusetts	1867	-----	-----	-----	-----	0.2900
Massachusetts	1886	-----	-----	-----	-----	0.5600

A comparison of the proportional numbers contained in the last two columns of that portion of the foregoing table relating to England and Wales, clearly illustrates the fallacy of estimating the relative frequency of cancer by the ratio which the annual deaths from it bears to the total yearly mortality from all causes. For instance, the proportion of deaths from cancer in one thousand deaths is, in 1840, considerably *below* that of 1839; whereas, the ratio per one thousand living is *above* it. In like manner, the mortality in one thousand deaths in 1863 is *below* that of 1862; whereas, the ratio per one thousand living is very slightly *higher*. On the other hand, in 1841, the ratio of deaths from cancer to the general mortality for that year shows a considerable *increase* in frequency over 1840; whereas, the ratio deduced from the number living at that time indicates a relative *decrease* of deaths from that disease. In fact, it is evident that the total annual mortality—principally from the influence of *epidemics*—is more liable to *fluctuations* than the mortality from cancer, and, hence, the ratios deduced from a comparison of the two would show a corresponding and proportionate oscillation, wholly independent of any *real* variation in the mor-

tality from cancer. Doubtless the fluctuations in the general mortality are governed by fixed laws: but we are not as yet in possession of sufficient data for estimating the value of the coefficients representing these perturbations, so as to apply them in our average reductions.

In relation to the important question of the *secular increase* in the mortality from cancer, the numbers contained in the *last* column of Table VII (the only *correct criterion*) afford a tolerably satisfactory answer. It will be noticed that the French data indicate, in a general sense, that this disease is *augmenting* in frequency in the Department of the Seine, but the increase is by no means uniform from year to year: it is irregularly progressive. The mortality from this cause seems to have increased in eleven years from 0.636 to 0.775 per one thousand living at the two extreme periods embraced in the records: being equivalent to a *mean annual* increment of 0.0126 per one thousand living.

The English statistics, embracing a period of twenty-six years, furnish results which are far more uniform and satisfactory. These seem to indicate very clearly that there has been a progressive *increase* in the death rate from cancer during the interval in question, from 0.160 in 1838 to 0.364 in 1863, per one thousand living; being a *mean annual* increment of about 0.0785 per one thousand living. This seems to be a most extraordinarily *large* augmentation: but it is fully sustained by the mortuary data furnished by Massachusetts. It thus appears to be pretty clearly demonstrated by these figures, that cancerous diseases are *increasing* in frequency both in France and in England: although the data are probably insufficient to determine the *law* of the increment.

It may be instructive to contrast the mortuary data in relation to coefficient of mortality for *consumption* or *phthisis* with those for *cancer*, so far as they are embraced in the *same* interval of time in the statistics of England and Wales. The annexed table furnishes the results of computations based upon data contained in Table VII, combined with those given in the reports of the Registrar-General of England:

TABLE VIII.

	Years.	Annual Deaths from Phthisis.	Deaths from Phthisis in 1,000 Deaths from All Causes.	Deaths from Phthisis in 1,000 Living.
England and Wales.....	1838	59,025	178.56	3.996
England and Wales.....	1839	59,559	180.21	3.939
England and Wales.....	1840	59,923	170.38	3.897
England and Wales.....	1841	59,592	177.01	3.822
England and Wales.....	1842	59,291	172.97	3.673
England and Wales.....	1860	50,149	118.66	2.520
England and Wales.....	1861	51,931	119.35	2.581
England and Wales.....	1862	50,962	116.73	2.506
England and Wales.....	1863	51,072	107.78	2.485
Massachusetts.....	1867	.....	.....	3.250
Massachusetts.....	1886	.....	.....	2.980

A comparison of the numbers in the last two columns of this table again illustrates the greater *irregularity* of the ratios deduced from the *deaths* from *all causes*, as compared with those computed from the number of persons *living*. But the most interesting and significant fact brought to view by a glance at the numbers in the last column of Table VIII is that in the

case of phthisis—unlike cancer—there is *no indication* of a *secular increase* in the coefficient of mortality. On the contrary, the figures appear to show very manifestly a progressive *decrease* in the death rate from this disease. It is certainly encouraging to discover that the development of medical science with advancing civilization has had an appreciable influence in abating the ravages of this scourge of the human race. In this respect, the *contrast* with cancer, as exhibited by the numbers in the last column of Table VII, is very striking.

Nearly all of our statistical data appear to indicate that in the case of cancer there has really been a *secular increase* in mortality, both in France, and in England and Wales. It would be premature to attempt to express this increment in numbers as a *time-factor* in our formula for the influence of *age* on the mortality from cancerous diseases. The rational discussion of such questions must be postponed until some zealous investigator of vital statistics arises, who has the leisure and the courage to properly analyze the vast accumulation of valuable facts which are entombed in the mortuary registers of the last forty years. It is the opinion of M. Tanchou that cancer, like *insanity*, increases in a direct ratio to the civilization of the country and of the people.*

In regard to the probable *causes* of this presumed increase in the mortality from cancer, it may be proper to remind the reader, that to some extent, the augmentation may be only *apparent*; since it may arise from more careful registration, from improvements in pathology, and from greater accuracy in diagnosis. It is difficult to estimate the influence of these circumstances. But there is another cause of this apparent increase of mortality which is far more *definite*. It is a well established fact, that the *mean duration* of human life has, even within a comparatively short time, been sensibly *increased*, by the rapid advancement of medical science and by a more philosophical application of hygienic and sanitary regulations. In London, according to Mr. Chadwick, the mean duration of human life increased *four years and nine months* in the one hundred and three years from 1728 to 1830. At Geneva, M. Edouard Mallet estimates that the mean duration of life has augmented in two hundred and seventy-four years (from 1560 to 1833) in the proportion of the numbers 100 to 191. Admitting the well determined and powerful influence of *age* upon the production and development of cancer, the *increase* in the duration of life stands in the nature of a *vera causa*, tending to augment the frequency of the disease: inasmuch as a greater proportion of the population would reach that period of existence which is peculiarly obnoxious to such affections. In other terms, the prolongation of human life incident to the progress of civilization must tend to *increase* the frequency of such diseases as are dependent upon advanced age for their production and development. Under this point of view, unless science can discover means of controlling the operation of ulterior causes, the increase of mortality from cancer must,

* The conclusion that cancer is *increasing in frequency* was first announced by the author in one of his earliest papers, entitled: "On Carcinoma in General and Cancer of the Stomach." "Trans. of the Society of Alumni of College of Physicians and Surgeons of the State of New York," No. 1, pp. 9-16, New York, 1842. Also, "New York Lancet," vol. 2, October 29 and November 5, 1842, pp. 284-287, and 299-304. This deduction was based upon the meager and imperfect mortuary data furnished by London, which seemed to show that the ratio of the annual deaths from cancer to the total annual mortality in that city had *increased* in one hundred and thirteen years (1728 to 1841) from 2.00 to 7.95 per one thousand deaths from all causes. (Vide above Table VII.) About eight months later (July, 1843), as already cited, M. Tanchou, by a totally independent course of investigation, arrived at an analogous result, with respect to the prevalence of this disease in France. This induced the author to undertake a more elaborate and rigorous investigation of the question in his Monograph, previously cited, entitled, "Statistical Researches on Cancer," published in May, 1846, which seemed to confirm his original conclusion.

indeed, be coextensive with the progressive advancement of human civilization. Future statistical investigators will be able to test the validity of this pessimistic view, by determining whether the alteration in the duration of life is adequate—through the influence of *age alone*—to explain the *whole* of the observed secular augmentation of mortality.

4. MORTALITY IN FRANCE AND ENGLAND.—We have already incidentally called attention to the remarkable *difference* in the mortality from cancer in France and in England at epochs nearly corresponding. A glance at the numbers contained in Tables VI and VII reveals a most striking and singular fact, viz.: the *enormous excess* of the mortality from cancer in the Department of the Seine, as compared with that in England and Wales at sensibly the same epoch. Of course, in view of the large *secular variation* of mortality, no comparison can be perfectly *fair* that does not involve sensibly the *same* period of time or years. The numbers in the last column of Table VII show that the proportional mortality from cancer—1830-40—in France, is to the mortality in England—1838-42—as 755 to 173. It is very difficult to imagine a plausible explanation of this curious and perplexing disparity. Perhaps some may be disposed to ascribe it to a greater latitude in the application of the term *cancer* on the Continent. But the English bills of mortality—at least since the Registration Act has been in operation—do not exhibit any such difference in the nomenclature of disease. Both in France and in England nearly all local malignant affections are included under the name cancer. Moreover, even if, with Mr. Farr, we include *tumors of uncertain seat* among the cancerous affections the disparity is *not sensibly* altered. For, making this allowance, the ratio becomes 755 to 191. So that the mortality from cancer in the Department of the Seine is nearly *quadruple* what it is in England and Wales, about the same time. Perhaps the habit of making necroscopic examinations may be more common in the French metropolis than it is in England, and thus a greater number of *internal cancers* may be detected and registered. But it is hardly reasonable to suppose that the disparity growing out of this circumstance would amount to the enormous proportion of 4 to 1. In view of M. Tanchou's idea, that the mortality from cancer is in a *direct ratio* to the intensity of human civilization, it may be, to some extent, consolatory to the inhabitants of England to discover that their more recent mortuary records, from 1860 to 1863, inclusive, indicate a very remarkable *increase* in the death rate from this disease.

The exact agreement in the proportional mortality from cancer among *males* and *females* in the two countries in question, as exhibited in Tables V and VI, demonstrates that whatever may be the cause of the disparity, *it operates with equal intensity upon both sexes*. We have no means of ascertaining what may be the influence of diet, habits of life, physical geography, etc., on the production of cancerous affections. Neither is it possible to estimate what share *governmental* influences may have in the induction of the peculiar predisposition to such diseases. In assigning a relative value to the various causes which concur in the production and development of chronic maladies, physicians have almost entirely overlooked the evils, moral and physical, which have their origin in the *endemic agency of bad government*. Doubtless, in many instances, physical influences are, in a measure, subordinate to this silent and potent agent. Its operation is slow, insidious, and, perhaps, inappreciable amid the multiplicity of surrounding disturbing causes: but it is constant and unrelenting, and the effects are certain and inevitable. The canker of discontent and restlessness, which corrodes the vitals of a high strung and intelligent people, degraded and oppressed by misrule during a series of

generations, must react on the physical system in a most powerful manner. So far as France is concerned, it may be difficult to reconcile the operation of such a cause with the proverbial gayety and elasticity of spirits which characterize her people. Yet it has been remarked that many of the cases of cancer of the stomach detailed by M. Chardel were furnished him during or immediately subsequent to the "Reign of Terror."

The want of access to the rich treasures of more recent mortuary records precludes the satisfactory discussion of many points in relation to cancer, such as the influence of habitation, occupation, married and single state, climate, season, etc., on the mortality from this disease.

In relation to *organs affected*, the researches of M. Tanchou show that the *uterus* is most liable to cancer, constituting about 32.8 per cent of the total deaths from the disease. The *stomach* comes next, 25.2 per cent; then the *mamma*, 21.7 per cent; and then the *liver*, 6.3 per cent, etc. Among *females* the mortality from *cancer uteri* is about 43 per cent of the total deaths from the disease in that sex, and the *mamma* 28.4 per cent. These proportions relate to the mortality from cancer in the Department of the Seine, in France. It would be interesting to secure similar statistical data in relation to England, so as to trace, if possible, the cause of the disparity in the mortality from cancer in these two countries. Such data are unquestionably entombed in the "Reports of the Registrar-General," but it would require the prolonged labor of an expert to extract them.

In conclusion, it is proper to remark that the science of vital statistics is in its infancy. This is the period for collecting facts; for multiplying observations; for establishing the basis for wider and higher generalizations. The condition of man in almost every region of the globe is changed, and we have only to look around us in the narrowest circle of the community to behold elements and principles in action, of whose existence a few years ago we had no conception. There are impulses on an immense scale impelling population forward; artificial wants of a new kind constantly creating; and the basis of the social system is widening and spreading into innumerable forms on every side. The "great constants" (to adopt an idea of the late Mr. Babbage), which mark these important changes, it is the business of statistical science to collect. Governments, perhaps for other reasons than those of a purely scientific nature, have become interested in the matter. The *census* is more carefully taken; *registrations* of births and deaths are more accurately noted. The medical philosopher is now furnished with better and more reliable data as the basis of his investigations. The *census* returns enable him to make population estimates for *every period of life*, and there is no reason why this *more accurate basis* should not be employed in discussing the relative mortality from different diseases. The problems presented are of the most complicated character, and all the resources of science are required to enable us to lay an effectual grasp upon them. We can scarcely expect the science of *living* matter to be less difficult, less complex, less in need of the resources of observation, experiment, and calculation, than the science of *dead* matter, than astronomy, physics, or chemistry.

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NOTES ON TOPOGRAPHY, AND ON THE DISTRIBUTION OF
PLANTS IN CALIFORNIA.

By W. P. GIBBONS, M.D., Alameda.

The Pacific Ocean furnishes nearly all the vapor for rains and storms for the greater part of this continent. It extends from the Arctic to the Antarctic Ocean, and covers an approximate area of fifty million square miles. From the time that the sun has passed the autumnal and returned to the vernal equinox, the full intensity of his rays are cast upon the surface of this immense ocean south of the equatorial belt. From March to September the greater heat falls north of the equator: in either case, large evaporation of water occurs, which has been estimated to aggregate fifteen inches of ocean surface: greater in the southern hemisphere, principally on account of its larger area of water. It will be taken for granted that the reader is familiar with the literature of trade winds, and with the theories connected with the formation and distribution of storms: as these are incidental but important points in connection with this essay.

Passing from west to east and between the parallels of 35 degrees and 40 degrees, the geological formation of California naturally divides its climate into three distinct sections: 1st. The Coast Range, extending about forty miles from the ocean to Mt. Diablo, on the western edge of the great valley; 2d. The San Joaquin and Sacramento Valleys, continuous in a northeasterly axis, about four hundred miles long and from forty to seventy miles wide; 3d. The Sierra section, which includes the foothills and mountains of that name. The Sierra Mountains, not less than nine thousand to twelve thousand feet high, form the great eastern wall of the valley, while the Coast Range, with its average of one thousand two hundred or one thousand five hundred feet of elevation, with peaks interspersed from three thousand to fifteen thousand feet high, constitutes its western side. As the foothills of the former range are traversed easterly, extensive areas of oak appear in places, which give way at a higher elevation, to numerous members of coniferae, to manzanita, to alder, and other alpine vegetation.

For about forty miles inward from the commencement of the foothills, and to an elevation of four thousand feet above sea level, the winter climate is bland, seldom marking a temperature below 30 degrees, while in summer, in the absence of western winds, the range is from 70 degrees to 110 degrees. The average rainfall is between forty and fifty inches, though during some seasons much less. Occasionally winds sweep down from higher localities which are covered with snow, and the temperature may thus be reduced for days together. As a general rule fogs are an exception.

The necessary condition of the Sacramento and San Joaquin Valleys is that of a desiccated, treeless plain, except in proximity to river banks, where vegetation has flourished and belts of alluvium have been deposited. In such places, scattered groups of oaks and lines of willow and cottonwood, with occasional displays of sycamore, relieve the tedium of the vista. The vertical rays of the summer sun fall upon it with full intensity, giving a temperature from 80 degrees to 115 degrees. No dews or fogs alleviate the oppressive heat. About the southern extremity sandstorms are not unfrequent: while from the northern end there sweep down occasionally siroccos, which sear vegetation in their course, and which find an outlet through the western side of the Coast Range along the course of the rivers.

A noticeable feature on both sides of the valley is the absence of running water after the cessation of winter rains. Though maps designate more than fifteen gulches debouching from the west side of the Coast Range into the valley, which are dignified by name of rivers, not one of them contains running water during the summer months. The average rainfall along the Coast Range is about twenty inches; it gradually decreases in quantity toward Southern California; while in the great valley it seldom exceeds three or four inches. The general topography of California may be summarized as having a territory of one hundred and fifty-seven thousand eight hundred square miles, along the center of which is a valley from forty to seventy miles wide, flanked on either side by mountain ranges, and having on the line of its longitudinal axis two rivers, the San Joaquin and the Sacramento, both of which receive numerous tributaries and debouch from nearly the same point through Suisun and San Pablo into San Francisco Bay.

From Mt. Diablo west to the ocean, the climate of the foothills is greatly modified. Much of this section comes within the range of the westerly winds of summer; all of it, more or less, is the recipient of fogs, which prevail with varying density from April to September. The humidity of the ocean atmosphere varies, as does that over the territory of the foothills. There may be fog banks on the ocean and none on the land; or there may be fog on the land and none on the ocean; again, fogs may envelop both land and ocean; or both land and ocean may have a perfectly transparent atmosphere. The space allotted to this paper will not admit of going into an explanation of these climatic phenomena.

The Coast Range has large forests of timber, principally oak, redwood, and pine. The coniferæ do not form dense forests on the Sierras, below three thousand five hundred feet elevation, though the *Pinus sabiniana* (Dougl.) begins to appear much lower, in isolated individuals; sometimes in groves covering small hills, sometimes along the flanks of table mountains, and in sections where there are no summer rains. This is familiarly known as the Digger pine, having received its name from a tribe of Indians which depended, in a great measure, on its nuts for winter store of provisions. From three thousand feet elevation, and upwards, dense forests of other coniferæ cover the mountain hillsides, interrupted, however, by granite formations, which occupy more than two thirds of the mountain superficies. These magnificent forests in places are wholly obliterated, wherever saw-mills can be located, and a demand for lumber exists.

Reference to other reports to the State Board of Health will enable the reader to apply the general facts of topography herein stated, to matters pertaining to public health in California.

Geology teaches that the Sierra and the Coast Range Mountains belong to the cretaceous era. That time was, when the waves of the ocean laved their foothills, and but a few straggling and nude masses of rock marked the present line of the Pacific Coast.

Before geology was a science, this theory existed as a tradition, and it became crystallized in an historical shape in a map of California published in 1720, a copy of which is now in the archives of the Pioneer Society. It represents the Gulf of California extending northwesterly and covering the present valley of the Sacramento and San Joaquin, completely segregating the Coast Range formation from the continent.

From geological data, it is more than probable that at the period when a large portion of Arctic vegetation was in full vigor of life, the Sierras and the Coast Range Mountains had so recently emerged from the ocean that they were not adapted to modern forms of vegetable growth.

It is reasonable to suppose that on the oldest portion of the continent the

highest forms of plants have had their origin. The progress of vegetation may thus be traced along those lines which are now represented by the presence of coal formations and of lignite. There was no way by which forest trees and plants could cover the isolated Coast Range Mountains but from the far north of the continent.

That the Arctic region was a point of distribution of forest trees is supported by the theory that the miocene forests of Europe probably migrated from America from the above source, and not from Europe. Among such trees we have in California the willow, the oak, the sycamore, the walnut, the sequoia, and others.

The fact of the genus sequoia being of Arctic origin, and having but one species—*S. gigantea*—sparsely diffused through the Sierra Mountains, while the other species—*S. sempervirens*, or redwood—forms such immense forests throughout the middle portion of the Coast Range, may be attributed, in part, to the distinct climatal conditions which environ their habitats. The former is found in few localities, where rain seldom falls between the months of April and November, and where high summer temperature prevails. Altitude does not appear as an important factor in its history. Probably on account of the dry summer atmosphere, its propagation by seed is exceedingly limited. John Muir, however, states that in the Fresno grove he observed large numbers of saplings. Unlike the redwood, they do not propagate by suckers from decaying stumps, possibly because of the absence of surrounding moisture. Winter temperature, mild about its localities, interposes no check to its growth. The writer has never seen nor heard of a redwood tree growing on the eastern side of the great valley.

The redwood, on the other hand, covers large areas with forest growth, within thirty miles of the ocean, and stretches along a distance of two hundred miles or more, parallel with the seashore. Its vigorous and enormous growth, sometimes attaining a diameter of over thirty feet, and its wonderful power of propagation from buds, evolving from the ground line of fallen trees and stumps, show its perfect adaptation of environments to life. Proximity to the ocean protects it from the high temperature of the interior, while westerly winds and fogs, almost continuous for about eight months of the year, darkens its surrounding atmosphere, and give it, essentially, all the conditions of a primitive Arctic climate. Nor is its territory invaded by a solitary known specimen of the *gigantea*, though soil and climate are so admirably adapted to both species. Hence, to attribute the migration of the redwood from parallel ranges of the Sierras, does not appear to be logical; certain it is, that the seeds of the redwood, or of any other tree, would meet with great difficulties in crossing the broad valley between the Coast Range and the Sierras, especially if its genesis on the present habitat is to be referred to a period when the diffusion of plants by birds is to be partially or wholly excluded from such agency—a conclusion which is not improbable, since Lesquereux, in Hayden's Geological Report of the Territories, designates and figures seven species of sequoia as having been found in tertiary deposits.

Says Dr. Gray—respecting the distribution of tertiary plants in the Arctic, and in their relation to similar kinds in the Eastern United States and Asia—that the northern parts of America, Europe, and Asia were, during that age, under a common forest vegetation with a comparatively moderate climate. Herr estimates from the miocene plants of Greenland that the mean annual temperature of the Arctic regions in the middle tertiary was as high as 48 degrees F. John Muir, in his botanical notes on the cruise of the Corwin, remarks that there is so much resemblance between vegetation of the polar regions and the Alpine valleys of temperate zones, that the botanist on the coast of Arctic Siberia or America might readily fancy

himself on the Sierra Nevadas at a height of ten thousand to twelve thousand feet above the sea. The manner in which Arctic plants can adapt themselves to environments he tells in the fact that "the snow is universal during winter, and plants are solidly frozen and buried for nearly three fourths of the year. In this condition they enjoy a sleep and rest about as profound as death, from which they awake in June and July in vigorous health, and speedily reach a far higher development of leaf, and flower, and of fruit than is generally supposed."

The most satisfactory explanation of the manner in which forest growths may have been diffused through California is to be found in the action of glaciers. At the close of the tertiary, after high mountains had been elevated about the polar regions, the temperature became cooler, and gave origin to what is called the glacial age. These huge mountains of ice, starting from points where the snows of successive winters added to their volume, in breaking loose from their beds not only carried with them vast amounts of soil and drift, but uprooted forests and took them along by their irresistible momentum. Thus trees, plants, and seeds have been transported and left to germinate and grow in localities hundreds of miles and more from their primary habitat.

Illustrations of this force are not wanting along the mountain ranges of the Pacific Coast. The original and most reliable authority on the discovery, the formation, the life, and the transporting power, and the death of glaciers along this western shore of the continent is John Muir, whose publications from time to time have justly claimed the admiration and indorsement of the scientific world. He has demonstrated the possibility that the sequoia and other conifers and trees may have been transplanted in California from their Arctic habitat.

That many of our phanerogamous plants did not emigrate across the Rocky Mountains directly west, is apparent from the fact cited by Serena Watson, that of one thousand one hundred and forty-one species given in the list of the great basin of the Wasatch and the Uintas, 60 per cent are found on the Pacific slope and about the same proportion do not pass eastward beyond the Rocky Mountains. He furthermore states that a large proportion of Pacific species, not only arborescent, but shrubby and herbaceous, stop abruptly on the eastern slope of the Sierras and do not reappear eastward.

The deduction from foregoing statements is that many Arctic species of trees and plants must have been moved south as the glacial system worked its way along the line of tertiary deposits of the Pacific Coast. As previously stated, this was the view entertained by Professor Gray, and previously to his publication, by John Muir, who, after years of patient toil and investigation, first demonstrated the presence of living glaciers in California, in the face of repeated assertions by eminent geologists that no such formations were in existence.

There are other well known agents which effect the distribution of trees and plants, and though the subject would admit of much interesting discussion, the length of this article will preclude further remarks. When we consider that the present condition of the earth's surface has been the work of an indefinite period of time, and compare its former condition of incompatibility for life of any kind with its present state, when its fauna and flora teem with unnumbered forms, it is impossible to resist the conclusion, that in the future, as in the veiled history of the past, slow and rupturing revolutions will still progress; changing physical characters; modifying or destroying present types of existences; bringing forth new and more vigorous forms, and changing the physical aspects which belong to present races of men.

WEATHER REVIEW OF SACRAMENTO AND VARIOUS OTHER PORTIONS OF CALIFORNIA.

By Sergeant JAMES A. BARWICK, Observer Signal Corps, Sacramento, California.

The following meteorological data shows the general features of the weather for Sacramento, San Francisco, Red Bluff, and Los Angeles; also an article on the climate of Santa Barbara, as compared with Mentone and San Remo, two of the most prominent places on the Great Riviera of Italy; showing plainly what a fine climate, the year round, Santa Barbara has.

The table of mean temperature for the State of California was deduced from the Southern Pacific Railroad Company's records, and compiled from them by Sergeant Nelson Gorom, Observer Signal Corps, San Francisco.

The table of monthly rainfall was prepared under authority of Lieutenant J. E. Maxfield, Signal and Indications Officer for the Pacific Coast, San Francisco, by Francis Creighton, Observer Signal Corps.

A brief description of the various climates of California and of the Sacramento Valley will be found quite interesting. These articles were taken from the annual meteorological review of the State of California, and compiled by Sergeant James A. Barwick, Meteorologist to the State Agricultural Society.

GENERAL WEATHER REVIEW OF SACRAMENTO.

This city is geographically situated in latitude north $38^{\circ} 35'$; longitude west from Greenwich, $121^{\circ} 30'$; elevation above sea level, 35 feet; elevation of the zero point of the barometer cistern above sea level, 64 feet.

The following tabulated data show the general meteorological features of the weather of this city by seasons, winter, spring, summer, and autumn. Also, an annual review of the weather from 1878 to 1887.

COMPARATIVE WINTER WEATHER AT SACRAMENTO FROM 1877-78 TO 1887-88.

This table of winter comparisons shows the average, highest, lowest, and range of temperature; the average relative humidity and dew point; total precipitation; prevailing direction of the wind; total and maximum velocity, with the direction at the time of maximum velocity; total number of clear, fair, cloudy, and foggy days, and total number of days rain fell; number of snow storms; solar and lunar halos; light and killing frosts; and the number of days the temperature was below 32° .

WINTER OF:	1877-1878	1878-1879	1879-1880	1880-1881	1881-1882	1882-1883	1883-1884	1884-1885	1885-1886	1886-1887	1887-1888
Average barometer	30.00	30.12	30.16	30.12	30.17	30.19	30.12	30.09	30.10	30.11	30.15
Highest barometer	30.38	30.51	30.68	30.46	30.52	30.74	30.58	30.43	30.40	30.51	30.63
Lowest barometer	29.46	29.77	29.47	29.48	29.75	29.68	29.42	29.49	29.32	29.54	29.50
Range of barometer	0.92	0.74	1.21	0.98	0.77	1.06	1.16	0.94	1.08	0.99	1.13
Average temperature	49.9	49.2	44.5	51.0	45.9	45.4	45.9	50.0	49.4	47.5	47.4
Highest temperature	67.0	73.5	64.0	67.0	62.8	71.7	71.0	70.0	72.7	67.0	75.0
Lowest temperature	27.0	23.5	25.0	35.0	29.0	22.0	21.0	27.0	27.5	30.0	19.0
Range of temperature	40.0	50.0	39.0	32.0	33.8	49.7	50.0	43.0	45.2	37.0	56.0
Average humidity	77.1	68.3	77.2	84.0	76.4	77.9	83.0	77.7	87.1	77.6	76.6
Average dew point					38.1	38.2	40.6	42.6	43.3	40.2	39.8
Prevailing wind	S.E.	N.	S.E.	S.E.	N.	S.E.	S.E.	N.W.	N.W.	S.E.	S.E.
Total precipitation	18.74	7.53	6.88	23.01	7.56	4.47	8.33	13.10	14.00	9.61	7.47
Total velocity of wind	13,452	12,650	13,735	16,092	14,611	11,131	12,294	16,406	13,889	14,003	13,944
Maximum velocity of wind	36	33	39	40	32	36	33	36	44	33	40
Direction at time of maximum velocity	S.E.	N.	S.	S.E.	N.	N.W.	S.	N.W.	S.E.	N.W.	S.E.
Clear days	26	44	39	14	46	52	47	40	42	41	44
Fair days	28	31	17	26	26	30	25	28	29	29	32
Cloudy days	36	15	35	50	18	8	19	23	19	20	15
Foggy days	0	0	6	6	5	4	8	0	7	0	0
Days rain fell	39	23	29	46	30	16	26	28	26	28	33
Snow storms	0	1	1	0	2	3	0	0	0	0	3
Solar halos	0	0	1	1	3	0	3	0	0	1	1
Lunar halos	0	0	3	2	1	0	2	0	1	0	0
Number of light frosts	9	15	11	11	27	19	5	25	8	10	5
Number of killing frosts	12	26	17	0	11	28	25	5	6	15	24
Number of days minimum temperature below 32°	5	17	17	0	5	23	11	4	4	4	15

COMPARATIVE SPRING WEATHER AT SACRAMENTO FROM 1878 TO 1888.

The following table shows the average, highest, lowest, and range of barometer; average, highest, lowest, and range of temperature; average relative humidity and dew point; total precipitation; prevailing directions, total, and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, and days that rain fell; solar and lunar halos; light and killing frosts; number of days the maximum temperature was above 90 degrees, and the minimum below 32 degrees:

SPRING OF:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Average barometer	29.94	30.05	30.06	30.01	30.04	30.01	29.97	29.97	30.00	29.96	29.98
Highest barometer	30.39	30.33	30.36	30.41	30.38	30.43	30.30	30.37	30.35	30.27	30.48
Lowest barometer	29.56	29.73	29.55	29.68	29.71	29.62	29.51	29.52	29.63	29.65	29.64
Range of barometer	0.83	0.60	0.81	0.73	0.67	0.81	0.79	0.85	0.72	0.62	0.84
Average temperature	60.5	59.3	55.0	60.4	57.6	58.5	57.9	61.8	56.5	59.7	59.2
Highest temperature	91.0	91.0	86.0	88.8	94.6	98.0	85.0	98.0	94.0	98.0	90.0
Lowest temperature	40.0	38.0	29.0	37.0	34.1	39.8	39.0	39.0	37.7	39.0	37.0
Range of temperature	51.0	53.0	57.0	51.8	60.5	58.2	46.0	59.0	56.3	59.0	53.0
Average humidity	67.1	68.4	66.2	68.4	61.9	68.9	73.3	64.9	71.9	65.3	66.9
Average dew point					43.0	47.3	48.8	48.8	46.7	46.8	47.0
Prevailing wind	S.	S.E.	S.E.	S.	N.	S.	S.W.	S.W.	S.W.	N.W.	S.W.
Total precipitation	4.33	8.84	16.66	3.01	6.12	7.22	12.52	0.76	6.83	3.52	3.54
Total velocity of wind	13,962	14,530	19,653	14,966	17,774	15,825	18,168	16,670	17,759	17,211	16,810
Maximum velocity of wind	40	32	36	28	35	34	35	30	37	30	48
Direction at time of maximum velocity	N.	N.	N.	N.	N.	N.W.	S.	N.W.	N.W.	S.E.	S.E.
Clear days	45	39	49	60	57	54	46	58	50	61	59
Fair days	28	34	24	22	19	26	23	28	30	25	23
Cloudy days	19	19	19	10	16	12	23	6	12	6	10
Days rain fell	21	32	27	16	25	24	27	11	26	17	19
Solar halos	1	1	3	0	1	5	5	0	6	5	2
Lunar halos	0	0	1	0	2	0	3	0	2	0	2
Number of light frosts	2	2	3	5	6	2	10	4	4	3	0
Number of killing frosts	0	0	3	0	0	0	0	0	0	0	0
Number days maximum temperature above 90°	1	1	0	0	2	2	0	4	1	3	0
Number days minimum temperature below 32°	0	0	1	0	0	0	0	0	0	0	0

COMPARATIVE SUMMER WEATHER AT SACRAMENTO FROM 1878 TO 1888.

The tabulated meteorological data below shows the average, highest, lowest, and range of barometer; average, highest, lowest, and range of temperature; prevailing direction, total and maximum velocity of wind, with the direction at the time of maximum velocity; total number of clear, fair, and cloudy days, and number of days upon which rain fell; solar and lunar halos; light and killing frosts; total number of days maximum temperature was above 90°:

SUMMER OF:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Average barometer	29.82	29.82	29.88	29.90	29.90	29.91	29.92	29.87	29.85	29.78	29.88
Highest barometer	30.12	30.08	30.19	30.14	30.10	30.20	30.14	30.12	30.06	30.06	30.21
Lowest barometer	29.63	29.62	29.58	29.70	29.72	29.63	29.73	29.64	29.65	29.50	29.63
Range of barometer	0.49	0.46	0.61	0.44	0.38	0.57	0.41	0.48	0.41	0.56	0.58
Average temperature	72.9	72.9	69.1	68.5	71.1	72.4	69.8	70.1	70.9	69.5	71.6
Highest temperature	100.5	103.0	98.0	98.6	99.8	103.5	100.0	105.0	105.0	100.0	107.5
Lowest temperature	49.0	51.0	49.0	48.0	51.2	49.8	52.9	51.5	51.5	47.0	48.5
Range of temperature	51.5	52.0	49.0	50.6	48.6	53.7	47.1	43.5	53.5	53.0	59.0
Average humidity	54.7	52.7	59.3	56.3	57.0	58.4	63.3	55.8	59.5	59.7	57.2
Average dew point					53.8	55.7	56.0	52.2	54.8	53.3	53.0
Prevailing wind	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
Total precipitation	.00	0.13	sprin.	0.50	0.10	.00	1.45	0.11	.00	sprin.	0.08
Total velocity of wind	13,303	13,645	16,066	16,531	15,449	15,609	16,518	18,474	14,917	16,465	15,625
Maximum velocity of wind	20	26	22	22	28	31	24	25	42	30	36
Direction at time of maximum velocity	N.W.	N.	S.	S.W.	N.W.	N.W.	S.W.	S.	N.W.	S.W.	S.W.
Clear days	83	81	85	86	87	89	77	81	91	86	77
Fair days	9	11	7	5	4	3	9	10	1	6	11
Cloudy days	0	0	0	1	1	0	6	1	0	0	4
Days rain fell	0	3	2	3	2	0	8	3	0	1	10
Solar halos	0	0	0	0	1	3	0	2	0	0	8
Lunar halos	0	0	0	0	0	0	0	0	0	0	0
Number days maximum temperature above 90°	30	38	12	16	32	34	21	30	35	31	40

COMPARATIVE AUTUMN WEATHER AT SACRAMENTO FROM 1877 TO 1887.

The comparative weather table below shows the average, highest, lowest, and range of barometer; average, highest, lowest, and range of temperature; average humidity and dew point; total precipitation; prevailing direction; total and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, and number of days rain fell; solar and lunar halos; light and killing frosts; number of days maximum temperature was above 90° and the minimum below 32°:

AUTUMN OF:	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer -----	29.97	29.99	30.00	30.04	30.03	30.02	30.01	30.00	29.93	30.01	29.91
Highest barometer -----	30.34	30.47	30.41	30.49	30.44	30.45	30.41	30.27	30.27	30.37	30.26
Lowest barometer -----	29.70	29.68	29.38	29.73	29.61	29.77	29.62	29.62	29.46	29.58	29.60
Range of barometer -----	0.64	0.79	1.03	0.76	0.83	0.68	0.79	0.65	0.81	0.79	0.66
Average temperature -----	63.4	62.5	60.9	59.9	58.5	58.8	60.1	60.0	62.8	58.5	63.9
Highest temperature -----	88.0	92.0	96.0	92.0	96.0	99.6	101.0	93.5	98.5	96.0	100.0
Lowest temperature -----	37.0	34.0	33.0	27.0	32.0	34.0	29.0	37.7	38.5	32.2	28.0
Range of temperature -----	51.0	58.0	63.0	65.0	64.0	65.6	72.0	55.8	60.0	63.8	72.0
Average humidity -----	54.3	54.4	65.2	54.9	58.4	69.6	68.8	69.1	66.3	64.5	54.0
Average dew point -----					42.4	47.5	48.7	49.0	49.2	45.1	44.9
Prevailing direction of wind {	S.	N.	S.	N.	N.	N.W.	S.	N. S.E.	S.E.	N.W.	N.W.
Total precipitation -----	1.80	1.35	2.93	0.05	2.73	6.42	2.48	2.61	11.44	0.89	0.47
Total velocity of wind -----	10,669	11,269	10,492	11,518	12,993	12,213	10,771	10,659	14,214	10,635	11,866
Maximum velocity of wind -----	28	32	36	28	24	32	25	27	36	36	33
Direction at time of maximum velocity -----	N.W.	N.	N.	N.	N.	N.W.	N.W.	N.W.	S.E.	N.W.	N.W.
Clear days -----	76	71	59	71	73	61	67	75	51	78	74
Fair days -----	6	16	20	14	15	22	18	13	23	12	13
Cloudy days -----	9	4	12	6	3	8	6	3	17	1	3
Days rain fell -----	13	7	13	2	12	16	14	9	25	7	7
Solar halos -----	0	0	2	2	0	1	0	1	2	1	2
Lunar halos -----	1	0	2	0	0	0	0	4	0	0	0
Number of light frosts -----	3	6	5	4	11	26	19	17	3	20	5
Number of killing frosts -----	0	3	4	12	3	0	6	0	0	2	3
Number days maximum temperature above 90° -----	12	4	10	4	5	8	8	1	15	9	14
Number days minimum temperature below 32° -----	0	0	0	8	0	0	2	0	0	0	2

ANNUAL WEATHER SUMMARY AT SACRAMENTO FROM 1878 TO 1887, BOTH YEARS INCLUDED.

The following table shows the average, highest, lowest, and range of barometer; average, highest, lowest, and range of temperature; greatest and least monthly range of temperature; average maximum and minimum temperature, and the mean of the same; average relative humidity and dew point; total yearly precipitation; prevailing direction, total, and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, cloudy, and foggy days, and the total number of days rain, snow, hail, and sleet fell; total number of earthquakes, snow storms, and storms with thunder and lightning; solar and lunar halos; light and killing frosts; total number of days maximum temperature was above 90°, and the minimum below 32°:

ANNUAL WEATHER REVIEW FOR:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.95	30.00	30.03	30.03	30.03	30.03	29.99	29.98	29.99	29.98
Highest barometer	30.51	30.68	30.49	30.46	30.52	30.74	30.58	30.43	30.51	30.46
Lowest barometer	29.46	29.38	29.48	29.61	29.71	29.62	29.42	29.46	29.32	29.45
Range of barometer	1.05	1.30	1.01	0.85	0.81	1.12	1.16	0.97	1.19	1.01
Average temperature	61.3	60.3	57.2	59.2	58.5	58.8	58.8	61.2	58.8	59.9
Highest temperature	100.5	103.0	98.0	98.6	99.8	103.5	100.0	105.0	105.0	100.0
Lowest temperature	23.5	25.0	25.0	31.9	27.0	22.0	21.0	34.2	27.5	28.0
Range of temperature	77.0	78.0	73.0	66.7	72.8	81.5	79.0	70.8	77.5	72.0
Greatest monthly range of temperature	50.0	49.0	49.0	46.7	55.2	55.8	46.0	58.0	52.8	58.7
Least monthly range of temperature	21.0	33.7	25.0	27.0	31.6	35.7	30.0	27.0	33.2	35.2
Average maximum temperature	81.5	83.7	80.0	81.6	82.0	84.3	70.0	73.2	71.5	72.9
Average minimum temperature	41.2	41.2	39.9	42.1	40.1	39.8	49.7	51.8	49.1	47.7
Mean of maximum and minimum temperature	61.4	62.4	59.9	61.8	61.0	62.0	59.8	62.5	60.3	60.3
Average range of temperature	40.3	42.5	40.1	39.5	41.9	44.5	38.8	40.7	42.6	46.2
Average humidity	62.2	65.7	64.6	66.7	66.0	69.0	70.7	67.8	70.1	63.7
Average dew point					45.7	47.3	48.5	48.8	47.8	46.0
Prevailing direction of wind	S.	S.	S.	S.	S.	S.	S.	S.	S.E.	N.W.
Total precipitation	23.45	22.37	31.99	20.71	18.06	13.48	34.32	20.72	18.17	13.43
Total velocity of wind	52,830	52,214	62,497	57,846	58,874	52,637	62,611	62,405	56,036	61,322
Maximum velocity of wind	40	39	40	32	35	36	36	36	44	40
Direction at time of maximum velocity	N.	S.	S.E.	S.E.	N.	N.W.	N.W.	S.E.	S.E.	S.E.
Total number of clear days	234	208	237	251	249	263	239	227	262	267
Total number of fair days	75	99	59	69	76	76	68	88	76	74
Total number of cloudy days	56	58	70	45	40	26	59	50	27	24
Total number of foggy days	0	4	5	8	1	11	0	0	4	0
Total number of days of precipitation	66	79	70	67	70	54	76	62	57	56
Number of earthquakes	2	0	0	1	0	0	0	2	1	1
Snow storms	0	1	1	0	3	2	0	0	0	0
Thunder and lightning	4	4	3	4	4	2	2	6	3	2
Annual number of solar halos	1	3	6	2	5	8	9	4	8	8
Annual number of lunar halos	0	2	4	2	3	0	9	1	2	0
Annual number of light frosts	18	17	14	34	69	33	31	24	30	18
Annual number of killing frosts	22	27	32	4	12	40	22	0	10	26
Total number of days maximum temperature was above 90°	35	48	16	22	42	44	21	48	40	46
Total number of days minimum temperature was below 32°	15	14	17	1	5	27	13	0	4	9

MEAN AVERAGE WINTER TEMPERATURE IN SACRAMENTO.

The tabulated statement below shows the average temperature for the winter months, and for the season also. The winter seasons, beginning with the season of 1853-54, and ending with the one of 1887-88; giving a mean average for the thirty-five years. Judging from the average temperature for each season, we must conclude that the season of 1879-80 was the coldest, 45.5°; and the warmest that of 1881, 51.0°; the mean average of the thirty-five years being 48.3°:

WINTER SEASON OF—	Mean Temp.— December.	Mean Temp.— January.	Mean Temp.— February.	Mean Winter Temperature.
1853-54.....	48.0	43.0	51.0	47.3
1854-55.....	47.9	43.7	52.5	48.0
1855-56.....	46.0	48.0	52.6	48.9
1856-57.....	43.9	48.5	50.2	47.5
1857-58.....	47.4	45.0	52.2	48.2
1858-59.....	44.5	44.9	50.5	46.6
1859-60.....	43.5	46.2	49.8	46.5
1860-61.....	49.3	47.1	52.2	49.5
1861-62.....	50.9	46.4	47.5	48.3
1862-63.....	46.4	46.9	48.0	47.1
1863-64.....	46.5	49.2	53.6	49.8
1864-65.....	50.2	47.4	49.0	48.9
1865-66.....	44.1	46.5	63.5	51.4
1866-67.....	50.2	48.2	47.8	48.7
1867-68.....	46.8	47.0	50.5	48.1
1868-69.....	47.0	47.6	49.9	48.2
1869-70.....	46.5	48.6	51.1	48.7
1870-71.....	45.5	48.3	49.4	47.7
1871-72.....	48.7	48.5	53.3	50.2
1872-73.....	49.0	52.7	48.2	50.0
1873-74.....	47.7	45.7	49.3	47.6
1874-75.....	45.0	46.9	52.7	48.2
1875-76.....	48.0	48.8	50.2	49.0
1876-77.....	45.5	49.1	55.0	49.9
1877-78.....	48.6	49.7	51.3	49.9
1878-79.....	47.2	45.5	55.0	49.2
1879-80.....	44.0	43.5	46.0	44.5
1880-81.....	50.3	49.2	53.5	51.0
1881-82.....	46.2	45.1	46.3	45.9
1882-83.....	48.2	41.9	46.0	45.4
1883-84.....	44.2	46.6	46.9	45.9
1884-85.....	48.8	47.1	54.0	50.0
1885-86.....	49.1	45.7	53.3	49.4
1886-87.....	49.2	48.5	44.7	47.5
1887-88.....	46.9	42.8	52.6	47.4
Totals	1651.2	1639.8	1779.6	1690.4
Averages for 35 years	47.2	46.9	50.8	48.3

MEAN AVERAGE SPRING TEMPERATURE IN SACRAMENTO.

The table below will be found to contain the average temperature for the Spring months, also for the season. The warmest one, as indicated by its average temperature, was 1853, 62.9°; the coldest, 1880, 55.0°; the mean average Spring temperature being 59.4°:

SPRING SEASON OF—	Mean Temp.— March.	Mean Temp.— April.	Mean Temp.— May.	Mean Spring Temperature.
1853	59.8	61.0	68.0	62.9
1854	53.0	60.0	62.0	58.3
1855	54.8	58.1	60.2	57.7
1856	57.0	58.8	63.9	59.9
1857	56.4	63.3	65.5	61.7
1858	53.7	59.8	65.2	59.6
1859	51.5	57.1	63.0	57.2
1860	53.3	57.8	58.5	56.5
1861	55.0	60.6	63.7	59.8
1862	53.6	58.0	61.2	57.6
1863	57.6	59.5	67.1	61.4
1864	56.1	62.1	68.5	62.2
1865	53.6	59.3	70.2	61.0
1866	54.2	61.9	63.1	59.7
1867	50.7	59.7	64.4	58.3
1868	55.0	60.1	64.2	59.8
1869	53.6	59.0	64.2	58.9
1870	53.0	57.0	61.0	57.0
1871	56.0	59.2	61.5	58.9
1872	56.8	57.6	67.0	60.5
1873	56.8	60.0	67.9	61.6
1874	52.9	59.5	64.7	59.0
1875	58.7	63.0	68.1	63.3
1876	54.6	59.5	65.7	59.9
1877	59.0	60.2	64.5	61.2
1878	56.7	59.4	65.5	60.5
1879	57.4	60.3	60.2	59.3
1880	48.8	54.6	61.6	55.0
1881	55.5	60.9	64.8	60.4
1882	53.0	55.8	64.0	57.6
1883	56.9	56.0	62.6	58.5
1884	52.9	56.7	64.0	57.9
1885	59.1	60.6	65.7	61.8
1886	52.1	55.5	62.0	56.5
1887	57.8	58.3	62.9	59.7
1888	53.6	62.3	61.8	59.2
Totals	1980.5	2132.5	2308.4	2140.3
Averages for 36 years	55.0	59.2	64.1	59.4

MEAN AVERAGE SUMMER TEMPERATURE IN SACRAMENTO.

The average temperature in the following table is for the summer months and for the summer season, showing by their average temperature that 1866 was the warmest, 74.8°; and the coldest to have been 1881, 68.5°: the mean average for thirty-six years is 71.6°; the season of 1866 being 3.2° above the mean average, and 1881 3.1° below the mean average for the past thirty-six years:

SUMMER SEASON OF—	Mean Temp.— June.	Mean Temp.— July.	Mean Temp.— August.	Mean Summer Temperature.
1853.....	77.0	75.0	71.0	74.3
1854.....	67.0	80.6	69.5	72.4
1855.....	71.1	72.5	73.0	72.2
1856.....	71.1	75.1	69.6	71.9
1857.....	71.9	71.4	71.3	71.5
1858.....	69.4	70.8	70.6	70.3
1859.....	74.8	69.1	67.2	70.4
1860.....	65.6	73.2	73.5	70.8
1861.....	66.2	73.6	69.7	69.8
1862.....	69.3	73.2	75.0	72.5
1863.....	69.1	75.6	70.7	71.8
1864.....	71.1	74.8	74.7	73.5
1865.....	73.5	74.0	71.7	73.1
1866.....	72.2	76.2	76.0	74.8
1867.....	70.3	73.7	71.7	71.9
1868.....	69.5	73.8	71.2	71.5
1869.....	70.8	74.3	71.3	72.1
1870.....	69.3	71.8	72.6	71.2
1871.....	70.1	70.2	72.0	70.8
1872.....	69.2	71.4	73.1	71.6
1873.....	71.7	73.2	66.3	70.4
1874.....	70.2	72.8	70.9	71.3
1875.....	70.6	73.3	72.5	72.1
1876.....	76.9	74.0	72.8	74.6
1877.....	72.5	75.0	72.9	73.5
1878.....	71.8	73.4	73.4	72.9
1879.....	72.1	71.8	74.7	72.9
1880.....	66.6	70.9	69.7	69.1
1881.....	66.2	71.1	68.2	68.5
1882.....	68.1	73.4	71.9	71.1
1883.....	72.6	73.1	71.4	72.4
1884.....	65.8	71.2	72.5	69.8
1885.....	66.2	71.0	73.0	70.1
1886.....	69.0	72.0	71.6	70.9
1887.....	69.1	70.2	69.1	69.5
1888.....	67.7	71.6	75.4	71.6
Totals.....	2525.6	3628.3	2581.7	2578.6
Averages for 36 years.....	70.2	73.0	71.7	71.6

MEAN AVERAGE AUTUMN TEMPERATURE IN SACRAMENTO.

The average temperature for the fall season indicates the fall of 1853 as being the warmest, 69.0°; that of 1881 and 1886 were the coldest, judging from the average temperature, 58.5°. The average mean temperature for thirty-five years past was 61.6°, showing the average of 1853 to have been 7.4° above the mean average, and that of 1881 and 1886 to have been 3.1° below the mean average temperature for the past thirty-five years:

FALL SEASON OF—	Mean Temp.— September.	Mean Temp.— October.	Mean Temp.— November.	Mean Autumn Temperature.
1853.....	76.0	78.0	53.0	69.0
1854.....	65.0	60.0	55.0	60.0
1855.....	68.0	63.0	50.6	60.5
1856.....	70.9	58.0	52.2	60.4
1857.....	67.9	61.5	53.2	60.9
1858.....	68.9	59.5	54.2	60.9
1859.....	65.9	63.3	54.0	61.1
1860.....	67.6	59.8	53.5	60.3
1861.....	67.8	59.9	53.6	60.4
1862.....	70.4	67.6	53.1	63.7
1863.....	69.0	62.8	52.7	61.5
1864.....	69.8	64.5	53.5	62.6
1865.....	68.8	63.1	56.9	62.9
1866.....	72.2	65.2	53.8	63.7
1867.....	68.8	62.7	54.8	62.1
1868.....	68.3	62.0	53.9	61.4
1869.....	69.9	63.1	54.0	62.3
1870.....	68.0	63.6	53.4	61.7
1871.....	67.4	62.2	50.2	59.9
1872.....	68.8	58.9	51.2	59.6
1873.....	69.9	61.4	57.5	62.9
1874.....	70.7	61.7	53.9	62.1
1875.....	65.7	69.9	56.7	64.1
1876.....	70.1	63.5	53.3	62.3
1877.....	72.8	62.9	54.7	63.5
1878.....	69.0	62.9	55.5	62.5
1879.....	70.5	61.5	50.9	61.0
1880.....	68.0	62.1	49.7	59.9
1881.....	67.8	56.8	50.8	58.5
1882.....	68.4	58.4	49.5	58.8
1883.....	71.6	58.2	50.5	60.1
1884.....	64.8	59.9	55.3	60.0
1885.....	69.8	64.3	54.4	62.8
1886.....	67.9	57.1	50.4	58.5
1887.....	70.4	66.5	54.7	63.9
Totals.....	2416.8	2185.8	1864.6	2155.8
Averages for 35 years.....	69.1	62.5	53.3	61.6

AVERAGE ANNUAL AND SEASONAL TEMPERATURE IN SACRAMENTO.

The statement below shows the average temperature, for each year, for thirty-five years: spring and summer for thirty-six years, and autumn and winter for thirty-five years. The coldest year, inferring from the average temperature, was that of 1880, 57.2°; the warmest was 1864, 62.8°; the mean average for the past thirty-five years, 60.2°, showing the coldest to have been 3° below the mean average, while the warmest year was that of 1864, when it was 2.6° above the mean average for thirty-five years. By careful study of the table, there will be noticed but a slight difference between the coldest and the warmest year, as compared with a thirty-five years' average, generally not more than 3°. Therefore, we might safely say that the average temperature of any year is not likely to vary more than 3° from 60° either way, between the hottest and coldest year, as compared with the mean average temperature for the past thirty-five years:

YEAR.	Mean Annual Temperature.	Mean Spring Temperature.	Mean Summer Temperature.	Mean Autumn Temperature.	Mean Winter Temperature.	
1853.....	62.6	62.9	74.3	69.0	1853-54.....	47.3
1854.....	59.5	58.3	72.4	60.0	1854-55.....	48.0
1855.....	59.5	57.7	72.2	60.5	1855-56.....	48.9
1856.....	60.1	59.9	71.9	60.4	1856-57.....	47.5
1857.....	60.7	61.7	71.5	60.9	1857-58.....	48.2
1858.....	59.5	59.6	70.3	60.9	1858-59.....	46.6
1859.....	58.7	57.2	70.4	61.1	1859-60.....	46.5
1860.....	59.0	56.5	70.8	60.3	1860-61.....	49.5
1861.....	60.1	59.8	69.8	60.4	1861-62.....	48.3
1862.....	62.2	57.6	72.5	63.7	1862-63.....	47.1
1863.....	60.3	61.4	71.8	61.5	1863-64.....	49.8
1864.....	62.8	62.2	73.5	62.6	1864-65.....	48.9
1865.....	61.0	61.0	73.1	62.9	1865-66.....	51.4
1866.....	62.1	59.7	74.8	63.7	1866-67.....	48.7
1867.....	59.9	58.3	71.9	62.1	1867-68.....	48.1
1868.....	60.1	59.8	71.5	61.4	1868-69.....	48.2
1869.....	60.4	58.9	72.1	62.3	1869-70.....	48.7
1870.....	59.6	57.0	71.2	61.7	1870-71.....	47.7
1871.....	59.6	58.9	70.8	59.9	1871-72.....	50.2
1872.....	60.4	60.5	71.6	59.6	1872-73.....	50.0
1873.....	60.7	61.6	70.4	62.9	1873-74.....	47.6
1874.....	59.8	59.0	71.3	62.1	1874-75.....	48.2
1875.....	62.5	63.3	72.1	64.1	1875-76.....	49.0
1876.....	61.7	59.9	74.6	62.3	1876-77.....	49.9
1877.....	61.2	61.2	73.5	63.4	1877-78.....	49.9
1878.....	61.3	60.5	72.9	62.5	1878-79.....	49.2
1879.....	60.3	59.3	72.9	60.9	1879-80.....	44.5
1880.....	57.2	55.0	69.1	59.9	1880-81.....	51.0
1881.....	59.2	60.4	68.5	58.5	1881-82.....	45.9
1882.....	58.5	57.6	71.1	58.8	1882-83.....	45.4
1883.....	58.8	58.5	72.4	60.1	1883-84.....	45.9
1884.....	58.8	57.9	69.8	60.0	1884-85.....	50.0
1885.....	61.2	61.8	70.1	62.8	1885-86.....	49.4
1886.....	58.8	56.5	70.9	58.5	1886-87.....	47.5
1887.....	59.9	59.7	69.5	63.9	1887-88.....	47.4
1888.....		59.2	71.6			
Totals.....	2106.0	2140.3	2578.6	2155.8		1690.4
Averages for 35 years.....	60.2	*59.5	*71.6	61.6		48.3

*Average for thirty-six years.

DAILY NORMAL TEMPERATURE FOR SACRAMENTO.

The following table of normal temperatures for each day of each month, at Sacramento, California, as deduced from three daily observations for nine years, from July, 1877, to December, 1885, inclusive, was prepared at the Chief Signal Office, Washington, D. C., by authority of the Chief Signal Officer:

DATE.	*Jan.	*Feb.	*Mar.	*April.	*May.	*June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	44.2	49.4	55.8	57.7	61.6	69.2	72.3	73.1	73.0	62.3	57.2	50.6
2	45.6	49.5	55.5	58.0	61.7	69.2	71.4	74.0	72.4	62.7	55.6	50.6
3	45.3	49.0	54.0	56.5	62.6	68.8	70.8	73.2	72.5	63.6	*56.5	49.6
4	45.5	49.7	53.4	†57.7	61.2	68.5	71.2	71.9	73.4	64.0	55.5	50.2
5	47.2	48.0	54.8	58.0	61.5	69.4	71.4	72.8	71.8	63.7	56.2	50.6
6	45.9	47.6	54.4	58.3	61.6	68.2	71.5	73.7	69.9	62.7	56.6	49.4
7	46.7	46.0	53.9	58.4	61.4	67.9	70.7	73.9	70.3	62.9	56.9	47.7
8	47.6	47.1	53.7	60.1	62.5	67.2	70.5	74.8	71.5	*62.5	56.2	45.9
9	45.8	47.1	53.7	58.8	61.4	67.5	71.0	75.4	70.8	63.0	55.0	46.1
10	45.9	†48.4	53.0	57.6	62.0	66.1	72.8	74.8	70.9	61.8	53.3	46.1
11	43.9	46.8	53.3	57.3	61.4	†65.7	74.4	74.3	69.9	61.1	52.1	46.4
12	42.7	46.2	53.4	56.6	59.4	68.2	75.4	72.5	70.4	58.7	51.7	45.3
13	43.6	48.1	53.2	56.2	59.9	68.5	74.0	72.0	70.8	57.0	52.0	44.7
14	45.7	47.9	54.1	56.8	59.2	68.3	74.1	72.8	70.4	56.6	53.0	45.7
15	44.6	47.3	54.0	46.5	60.4	67.8	71.5	73.3	70.3	58.6	52.3	47.8
16	45.9	48.8	54.8	55.4	60.4	68.4	73.0	*72.1	68.3	58.9	52.5	47.3
17	46.0	48.9	53.5	54.7	61.5	69.3	72.5	71.5	68.0	60.9	50.5	47.3
18	†45.5	49.7	53.4	56.4	64.0	69.2	70.6	72.9	67.6	61.4	50.1	49.2
19	45.4	50.1	54.0	54.4	65.8	68.6	71.0	71.7	67.5	62.2	50.2	48.6
20	45.7	50.3	55.5	55.4	64.7	68.8	72.5	69.5	68.3	61.3	50.5	47.2
21	45.8	51.2	56.2	57.5	64.0	68.4	73.2	69.2	69.6	61.4	51.0	48.7
22	†47.4	51.9	57.0	58.2	63.8	67.2	73.6	69.5	69.5	60.9	50.7	48.7
23	47.4	53.1	56.5	58.3	64.8	69.2	74.5	69.4	67.3	60.5	50.9	48.0
24	48.0	53.4	56.4	60.1	66.3	68.8	73.3	69.3	66.4	61.0	50.4	49.3
25	47.4	54.9	57.0	58.5	66.9	70.5	71.8	69.7	66.4	61.3	48.5	48.2
26	45.8	54.8	56.4	58.1	67.0	71.5	71.3	69.6	63.7	59.7	48.3	47.2
27	46.3	55.0	†58.4	61.0	67.8	70.5	72.7	69.9	67.1	60.0	48.7	46.7
28	47.1	54.7	56.5	62.7	68.5	68.8	72.3	69.5	66.3	59.7	48.9	46.1
29	48.0	.....	57.6	62.7	69.0	69.6	71.7	70.1	65.1	59.6	50.1	44.1
30	48.2	.....	57.2	52.6	68.9	71.5	72.5	71.7	63.1	58.1	50.4	43.5
31	49.4	.....	57.1	.....	69.0	.....	72.4	72.7	.....	55.9	.....	42.6
Monthly	46.1	49.9	55.1	58.0	63.6	68.7	72.3	72.0	69.2	60.8	52.4	47.4

* Means for eight years.

† Means for seven years.

MONTHLY NORMAL TEMPERATURE FOR SACRAMENTO.

The following normal temperatures for each month of the year, for Sacramento, from 1853 to 1887, inclusive—periods of thirty-five and thirty-six years. This table gives the general average temperature for each month, and the annual average, which is termed the normal temperature of a place, in this case being Sacramento, and calculated from three daily observations:

NORMAL TEMPERATURE OF THIRTY-FIVE AND THIRTY-SIX YEARS.

	Degrees.		Degrees.
January—thirty-five years	47.0	August—thirty-six years	71.6
February—thirty-five years	50.8	September—thirty-five years	69.1
March—thirty-six years	55.0	October—thirty-five years	62.5
April—thirty-six years	59.2	November—thirty-five years	53.3
May—thirty-six years	64.1	December—thirty-five years	47.2
June—thirty-six years	70.2	Yearly—thirty-five years	60.2
July—thirty-six years	73.0		

Degrees.

Normal winter temperature of thirty-five years	48.3
Normal spring temperature of thirty-six years	59.4
Normal summer temperature of thirty-six years	71.6
Normal autumn temperature of thirty-five years	61.6
Normal yearly temperature of thirty-five years	60.2

RAINFALL FOR SPRING, SUMMER, AUTUMN, WINTER, AND TOTAL FOR EACH YEAR, AT SACRAMENTO.

The following table gives the rainfall for each season of spring, summer, autumn, and winter; also the total rainfall for each year and for each season. The table shows the annual rainfall for each year, beginning with the year 1850, and the total for each season, beginning with that of 1849-50. The rainfall for the winter seasons begins with the winter of 1849-50, and ends with the winter of 1887-88—making a total of thirty-nine winters:

YEAR.	Rainfall for Spring.	Rainfall for Summer.	Rainfall for Autumn.	Rainfall for Winter.	Annual Rainfall.	Season of—	Inches.
1849			4.00		*16.50	1849-50	36.00
1850	14.50	none	sprinkle	17.80	19.50	1850-51	4.71
1851	3.71	none	3.32	1.00	15.10	1851-52	17.98
1852	6.89	none	6.00	7.77	27.00	1852-53	36.36
1853	11.95	sprinkle	1.50	18.41	19.99	1853-54	20.06
1854	4.96	.31	1.66	13.29	19.83	1854-55	18.62
1855	9.67	.01	.75	7.28	18.56	1855-56	13.76
1856	5.37	.03	.85	7.61	14.26	1856-57	10.46
1857 .....	.68	.35	3.06	8.58	12.91	1857-58	14.99
1858	4.29	.11	3.16	7.53	16.80	1858-59	16.04
1859	3.66	none	6.50	9.21	16.86	1859-60	22.06
1860	10.47	.05	1.15	5.07	19.19	1860-61	16.18
1861	4.39	.69	2.17	9.87	21.38	1861-62	36.10
1862	5.43	.02	.36	27.94	27.44	1862-63	11.59
1863	4.41	none	1.49	6.81	12.20	1863-64	7.79
1864	3.12	.17	6.84	3.09	19.27	1864-65	22.59
1865	2.31	sprinkle	2.99	13.36	11.15	1865-66	17.91
1866	4.75	.12	2.43	10.07	26.52	1866-67	25.32
1867	2.82	none	3.82	20.05	30.03	1867-68	32.79
1868	6.93	sprinkle	.77	22.04	19.50	1868-69	16.64
1869	4.83	.01	2.97	11.03	18.19	1869-70	13.57
1870	4.03	sprinkle	.60	6.57	10.21	1870-71	8.47
1871	2.90	sprinkle	1.43	4.97	19.32	1871-72	24.05
1872	2.83	.02	2.15	19.47	19.17	1872-73	14.19
1873	1.06	.02	1.52	11.08	18.20	1873-74	22.92
1874	4.31	sprinkle	6.11	17.07	17.92	1874-75	17.70
1875 .....	.80	1.10	6.64	9.69	23.31	1875-76	26.31
1876	5.40	.23	3.75	14.26	18.12	1876-77	9.19
1877	1.39	.01	1.80	3.81	8.44	1877-78	24.86
1878	4.33	none	1.35	18.73	23.45	1878-79	17.85
1879	8.84	.13	2.93	7.53	22.37	1879-80	26.47
1880	16.66	sprinkle	.05	6.88	31.99	1880-81	26.57
1881	3.01	.50	2.73	23.01	20.71	1881-82	16.51
1882	6.12	.10	6.42	7.56	18.06	1882-83	18.11
1883	7.22	none	2.48	4.47	13.48	1883-84	24.78
1884	12.52	1.45	2.61	8.33	34.92	1884-85	16.58
1885 .....	.76	.11	11.44	13.10	20.72	1885-86	32.27
1886	6.83	none	.89	14.00	18.17	1886-87	13.97
1887	3.52	sprinkle	.47	9.61	13.43	1887-88	11.56
1888	3.54	.08		7.47			
Totals	211.21	5.62	111.16	435.12	738.67		763.88
Averages	†5.416	†0.144	†2.850	†11.157	†19.439		†19.587

* Rainfall for September, October, November, and December, 1849.

† Average for 39 years. ‡ Average for 38 years.

HIGHEST, LOWEST, AND AVERAGE TEMPERATURE, WITH PREVAILING WIND, AT SACRAMENTO.

The following table shows the highest, lowest, and average yearly temperature, along with the prevailing direction of wind, for each year. This data is from the records of Dr. Thomas M. Logan, the railroad company, Mr. Samuel H. Gerrish, and the records of the United States Signal Office. The records cover a period of thirty-six years. It shows that a very low temperature is never recorded at this point. Often several years will intervene without the temperature falling to the freezing point. The lowest recorded temperature is 19°, in January, 1854, and January, 1888; the highest 108°, on August 24, 1888. The prevailing direction of wind for the year is usually from the south.

YEAR.	Highest Temperature.	Lowest Temperature.	Average Annual Temperature.	Prevailing Direction of Wind for Each Year.
1853.....	97	32	62.6	N.W.
1854.....	102	19	59.5	N.W.
1855.....	100	25	59.5	N.W.
1856.....	100	32	60.1	S.E.
1857.....	98	31	60.7	S.E.
1858.....	97	29	59.5	S.
1859.....	96	34	58.7	S.
1860.....	90	37	59.0	S.
1861.....	87	36	60.1	S.
1862.....	94	32	62.2	N.W.
1863.....	95	34	60.3	N.W.
1864.....	96	34	62.8	S.E.
1865.....	94	31	61.0	S.E.
1866.....	98	33	62.1	S.E.
1867.....	99	28	59.9	S.
1868.....	100	30	60.1	S.
1869.....	102	31	60.4	S.
1870.....	106	21	59.6	S.
1871.....	102	30	59.6	S.
1872.....	100	26	60.4	N.
1873.....	105	31	60.7	S.
1874.....	96	33	59.8	S.
1875.....	100	33	62.5	S.
1876.....	98	30	61.7	S.
1877.....	103	31	61.2	S.
1878.....	101	24	61.3	S.
1879.....	103	25	60.3	S.
1880.....	98	25	57.2	S.
1881.....	99	32	59.2	S.
1882.....	100	27	58.5	S.
1883.....	104	22	58.8	S.
1884.....	100	21	58.8	S.
1885.....	105	34	61.2	S.
1886.....	105	28	58.8	S.E.
1887.....	100	28	59.9	N.W.
1888.....	*108	19	-----	S.

* Up to September 1, 1888.

Highest temperature in 36 years, 108°—on August 24, 1888.

Lowest temperature in 36 years, 19°—in January, 1854, and 19° in January, 1888.

Average annual temperature for 35 years, 60.2°.

General prevailing direction of wind—from the south.

RAINFALL OF SACRAMENTO FROM SEPTEMBER, 1849, TO SEPTEMBER, 1888.

The following table of rainfall, from September, 1849, to September 1, 1888, was collected from the records of Dr. T. M. Logan, Dr. F. W. Hatch, and those of the United States Signal Service:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Inches
1849									.25	1.50	2.25	12.50		1849-50	36.00
1850	4.50	.50	10.00	4.25	.25	none	none	none	none	none	spring.	spring.	19.50	1850-51	4.71
1851	.65	.35	1.88	1.14	.69	none	none	none	1.00	.18	2.14	7.07	15.10	1851-52	17.98
1852	.58	.12	6.40	.19	.30	none	none	none	spring.	none	6.00	13.41	27.00	1852-53	36.36
1853	3.00	2.00	7.00	3.50	1.45	spring.	spring.	none	spring.	spring.	1.50	1.54	19.99	1853-54	20.06
1854	3.25	8.50	3.23	1.50	.21	.31	none	spring.	spring.	1.01	.65	1.15	19.83	1854-55	18.62
1855	2.67	3.46	4.20	4.32	1.15	.01	none	none	spring.	none	.75	2.00	18.56	1855-56	13.76
1856	4.92	.69	1.40	2.13	1.84	.03	none	none	spring.	.20	.65	2.40	14.26	1856-57	10.46
1857	1.38	4.80	.68	spring.	spring.	.35	none	spring.	none	.66	2.41	2.63	12.91	1857-58	15.00
1858	2.44	2.46	2.88	1.21	.20	.10	.01	spring.	spring.	3.01	.75	4.34	16.80	1858-59	16.03
1859	.96	3.91	1.64	.98	1.04	none	none	none	.02	none	6.48	1.83	16.86	1859-60	22.09
1860	2.31	.93	5.11	2.87	2.49	.02	.63	none	.06	.91	.18	4.28	19.19	1860-61	16.10
1861	2.67	2.92	3.32	.48	.59	.14	.55	none	none	spring.	2.17	8.64	21.38	1861-62	35.56
1862	15.04	4.26	2.80	.82	1.81	.01	none	.01	none	.36	spring.	2.33	27.44	1862-63	11.58
1863	1.73	2.75	2.36	1.69	.36	none	none	none	spring.	none	1.49	1.82	12.20	1863-64	7.87
1864	1.08	.19	1.30	1.08	.74	.09	none	.08	spring.	.12	6.72	7.87	19.27	1864-65	22.51
1865	4.78	.71	.48	1.37	.46	none	spring.	none	.08	.48	2.43	.36	11.15	1865-66	17.93
1866	7.70	2.01	2.02	.48	2.25	.10	.02	none	none	spring.	2.43	9.51	26.52	1866-67	25.30
1867	3.44	7.10	1.01	1.80	.01	none	none	none	.01	none	3.81	12.85	30.03	1867-68	32.79
1868	6.04	3.15	4.35	2.31	.27	spring.	none	none	none	none	.77	2.61	19.50	1868-69	16.64
1869	4.79	3.63	2.94	1.24	.65	.01	none	none	spring.	2.12	.85	1.96	18.19	1869-70	13.57
1870	1.37	3.24	1.64	2.12	.27	spring.	spring.	spring.	none	.02	.58	.97	10.21	1870-71	8.44
1871	2.08	1.92	.69	1.45	.76	spring.	none	none	spring.	.21	1.22	10.59	18.92	1871-72	23.65
1872	4.04	4.74	1.94	.61	.28	.02	none	none	spring.	.22	1.93	5.39	19.17	1872-73	14.21
1873	1.23	4.36	.55	.51	none	spring.	.02	spring.	none	.31	1.21	10.01	18.20	1873-74	22.90
1874	5.20	1.86	3.05	.89	.37	spring.	spring.	none	.05	2.26	3.80	.44	17.92	1874-75	17.70
1875	8.70	.55	.80	spring.	spring.	1.10	none	none	none	.44	6.20	5.52	23.31	1875-76	26.53
1876	4.99	3.75	4.15	1.10	.15	none	.21	.02	spring.	3.45	.30	none	18.12	1876-77	8.96
1877	2.77	1.04	.56	.19	.64	.01	spring.	spring.	none	.73	1.07	1.43	8.44	1877-78	24.86
1878	9.26	8.04	3.09	1.07	.17	none	none	none	.29	.55	.51	.47	23.45	1878-79	17.85
1879	3.18	3.88	4.88	2.66	1.30	.13	spring.	spring.	none	.88	2.05	3.41	22.37	1879-80	26.47
1880	1.64	1.83	1.70	14.20	.76	none	spring.	none	none	none	.05	11.81	31.99	1880-81	26.57
1881	6.14	5.06	1.37	1.64	spring.	.50	spring.	none	.30	.55	1.88	3.27	20.71	1881-82	16.51
1882	1.89	2.40	3.78	1.99	.35	.10	spring.	none	.57	2.63	3.22	1.13	18.06	1882-83	18.11
1883	2.23	1.11	3.70	.67	2.85	none	none	none	.90	.96	.61	.44	13.48	1883-84	24.78
1884	3.43	4.46	8.14	4.32	.06	1.45	none	spring.	.60	2.01	none	10.45	34.92	1884-85	16.58
1885	2.16	.49	.08	.68	spring.	.11	spring.	none	.08	.02	11.34	5.76	20.72	1885-86	32.27
1886	7.95	.29	2.68	4.08	.07	none	none	none	none	.68	.21	2.21	18.17	1886-87	13.97
1887	1.12	6.28	.94	2.53	spring.	none	none	spring.	.02	none	.45	2.09	13.43	1887-88	7.94
1888	4.81	.57	3.04	.10	.40	.08	spring.	none	-----	-----	-----	-----	-----	1888-89	*spring
Totals	148.12	110.31	111.80	74.17	26.19	4.67	1.14	.11	4.23	26.48	80.46	176.49	738.67	-----	763.88
Averages	3.798	2.828	4.867	1.902	0.672	0.120	0.029	.003	.108	.690	2.063	4.525	19.439	-----	19.587

* Up to September 1, 1888.

MONTHLY AND ANNUAL MEAN TEMPERATURES

(In degrees Fahrenheit) at Points in California, during Year ending June 30, 1887.

Prepared by SERGEANT NELSON GOROM, Observer Signal Corps, San Francisco, California.

PLACE.	1886.						1887.						Mean.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Almaden					55.7	51.4	50.7	47.1	56.5	56.5	62.6	68.2	56.4
Anaheim	72.3	76.6	71.5	66.1	60.5	56.9	54.0	53.3	58.9	61.0	63.4	65.8	63.3
Antioch	78.3	74.5	67.6	62.2	52.6	52.4	49.8	47.1	59.0	62.3	68.2	73.6	62.4
Aptos	61.4	61.9	60.9	55.1	51.6	53.1	49.1	47.0	55.5	55.7	58.9	63.4	56.5
Athlone	78.8	82.0	75.0	67.6	57.9	53.2	50.5	45.8	58.9	62.1	71.4	78.7	65.7
Auburn	76.7	77.5	70.5	55.2	47.9	48.1	44.9	39.8	54.5	55.4	63.1	71.3	58.1
Bishop Creek	89.9	88.1	81.1	60.5	48.7	49.5	44.7	41.5	62.5	63.9	72.1	82.6	65.2
Boca	62.7	62.7	54.8	45.0	28.4	34.1	27.4	21.4	34.3	42.9	51.8	56.4	43.3
Bordeau	85.7	86.4	77.1	60.8	48.5	46.5	47.2	46.9	59.0	61.8	72.9	79.2	64.8
Brentwood	82.4	80.9	69.3	62.8	52.6	50.5	49.2	46.7	60.8	64.3	67.8	77.9	63.7
Brighton	81.4	81.4	74.9	65.5	52.6	53.8	50.9	47.6	59.5	62.3	68.8	77.9	64.0
Byron	85.6	82.2	75.8	64.0	52.7	51.2	48.1	46.8	62.5	65.3	74.5	83.7	66.1
Caliente	84.7	85.6	73.4	67.1	53.7	55.0	50.4	47.5	59.0	58.7	68.1	77.6	65.3
Calistoga	73.1	71.6	68.2	58.4	49.5	50.6	47.5	43.3	55.7	59.5	63.6	70.2	59.2
Chico	89.1	85.1	77.9	62.5	52.9	52.6	50.5	45.0	60.0	65.0	72.7	80.6	66.3
Chualar	66.2	66.0	64.7	60.8	56.0	54.0		51.0	60.0	59.6	64.7		60.3
Cisco	62.4	60.5	54.6	40.1	34.7	35.4	29.5	24.4	36.4	38.6	47.9	55.3	43.0
Colfax	72.6	76.1	71.3	54.7	49.5	48.8	45.0	39.8	54.7	54.4	62.3	69.5	58.9
Colton	87.7	86.1	79.1	64.2	59.1	63.0	56.8	51.1	64.3	60.3	68.4	74.8	67.1
Corning	81.4	79.7	73.6	66.0	50.2	51.6	48.7	44.0	55.7	59.8	68.7	78.3	63.1
Davis	80.4	76.2	68.1	60.4	54.2	53.1	50.2	47.6	61.1	62.1	68.7	75.4	63.1
Delano	88.0	87.5	78.3	62.2	48.6	52.0	46.4	48.5	58.4	66.3	74.7	82.7	66.1
Delta	77.3	76.1	72.5	51.8	47.5	45.8	41.2	34.9	50.8	52.6	64.1	70.4	57.6
Dunnigan	84.5	81.2	76.5	64.5	52.3	51.7	51.0	46.1	63.6	64.6	71.7	79.7	65.6
Elmira	84.4	85.4	77.5	65.9	55.9	54.5	53.8	47.5	59.9	63.2	66.6	73.0	65.5
Emigrant Gap	65.3	66.9	64.0	46.2	44.3	44.4	38.6	30.8	43.8	45.9	53.8	61.5	50.5
Eureka							47.0	41.4	49.3	48.5	51.9	52.7	48.7
Farmington	80.4	77.2	72.8	61.8	52.3	50.9	45.9	46.1	61.8	60.5	67.6	74.8	62.5
Fort Bidwell	68.2	69.6	60.2	44.6	33.6	38.4	32.5	24.5	43.6	43.5	53.8	57.7	47.0
Fresno	84.2	85.6	77.4	61.0	57.4	50.9	47.8	49.3	62.7	63.6	72.4	79.6	66.9
Galt	78.0	76.3	70.1	58.6	50.2	49.5	50.5	45.4	60.5	58.6	75.4	81.7	62.1
Gilroy	72.5	71.5	65.3	57.9	51.5	53.2	47.7	46.8	56.5	56.9	62.4	66.6	59.0
Goshen	88.9	88.7	77.5	61.4	48.3	47.4	46.1	47.1	63.7	64.3	73.2	85.6	66.3
Hollister	71.3	73.3	68.3	63.3	53.8	52.1	51.9	49.0	59.8	59.4	65.5	68.0	61.3
Indio	96.5	90.6	83.9	74.4	63.4	62.2	54.1	59.5	76.6	72.8	79.4	90.0	75.3
Ione	77.5	76.0	67.4	54.7	47.1	49.8	44.8	44.9	54.9	57.6	63.7	73.4	59.2
Kings City				62.0	53.8	52.7	49.7	44.6	61.4	58.9	65.6	66.4	57.1
Keeler	79.9	81.5	74.1	58.2	45.1	44.7	43.1	40.0	56.5	57.4	66.7	74.0	60.4
Keene	80.9	80.8	73.7	58.5	52.2	49.1	45.6	41.5	52.0	50.7	60.5	67.1	59.2
Kingsbury	83.6	83.5	73.2	56.4	46.2	45.9	44.3	45.4	59.6	61.1	69.5	77.4	62.4
Knights Landing	81.7	79.9	71.2	60.9	53.8	56.3	54.8	45.8	48.3	53.1	61.3	69.1	61.7
Lathrop	74.6	75.4	68.2	57.3	47.7	48.9	46.4	44.6	56.9	57.9	65.7	72.8	59.8
Lemoore	80.2	82.1	70.5	57.7	45.6	49.8	46.9	49.3	62.9	61.0	69.6	78.1	62.9
Livermore	70.1	72.4	68.5	61.6	53.3	55.2	52.1	45.7	57.3	56.1	60.5	65.9	59.3
Livingston	89.6	91.4	81.9	66.8	63.0	57.4	53.6	52.9	66.1	65.5	73.9	81.2	70.1
Los Angeles	69.7	71.8	65.6	59.3	56.6	55.7	55.4	51.6	59.1	59.1	63.1	66.1	61.7
Mammoth Tank	102.9	102.3	96.7	77.2	62.3	60.8	57.7	58.0	78.4	80.4	91.2	100.2	80.7
Martinez	68.2	68.6	62.6	51.9	49.2	48.7	48.0	44.6	53.6	57.1	60.8	67.5	56.4
Marysville	76.0	76.6	79.0	66.0	61.9	50.8	48.5	42.5	54.9	57.9	71.4	75.6	63.7
Menlo Park	66.5	65.4	61.1	55.5	48.7	50.5	46.4	47.1	55.8	55.4	61.0	66.5	56.0
Merced	81.8	82.0	74.9	61.8	54.2	54.6	49.0	46.8	62.9	62.1	71.7	78.1	65.7
Modesto	86.9	87.3	74.3	61.1	49.8	50.1	46.6	46.1	59.7	63.8	72.5	78.1	64.8
Mojave	84.6	74.6	75.7	59.2	47.1	48.9	46.5	42.3	62.5	67.4	77.9	78.8	63.2
Monterey	60.2	60.3	59.1	54.8	50.8	52.0	49.4	48.3	54.0	53.3	58.4	62.0	55.4
Napa		67.1	58.7	55.1	49.6	50.1	48.8	45.2	53.5	57.9	62.0	72.7	56.6
Newhall	85.7	85.9	70.6	59.4	50.5	53.2	49.0	46.4	56.7	58.6	63.6	71.1	62.2
Niles	71.5	71.4	65.5	56.2	50.2	48.6	46.6	46.8	57.0	56.8	63.4	64.5	58.1
Oakland	62.5	62.1	61.5	56.7	53.6	53.4	51.5	47.7	53.5	56.0	57.5	60.5	56.3
Orland	86.9	85.9	79.3	62.6	54.4	53.5	53.4	45.3	59.4	59.6	69.2	77.8	65.4
Pajaro	63.5	64.2	63.4	57.1	55.5	56.3	51.5	48.4	56.1	54.9	58.2	61.9	57.6
Paso Robles					49.7	49.9	44.3	45.3	54.5	57.9	64.7	70.6	54.6
Petaluma	67.0	68.2	64.9	60.5	54.2	53.8	51.9	49.1	57.5	57.8	65.5	71.7	60.6
Pleasanton	73.7	76.1	70.8	60.5	53.3	53.4	51.6	47.9	57.8	59.5	64.4	69.3	61.2
Red Bluff	82.9	81.5	75.6	60.7	51.3	50.0	48.7	43.4	58.9	60.2	68.8	77.1	63.5

MONTHLY AND ANNUAL MEAN TEMPERATURES—Continued.

PLACE.	1886.						1887.						Mean.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Redding	84.6	85.7	79.5	63.7	50.3	48.7	48.6	42.7	59.0	61.6	72.9	76.4	64.5
Rocklin	79.6	76.8	69.7	59.6	51.8	50.5	49.6	47.4	56.3	59.6	66.3	72.1	61.6
Sacramento	72.0	71.6	67.9	57.1	50.4	49.2	48.5	44.7	57.8	58.3	62.9	69.1	59.1
Salinas	62.7	66.1	63.5	56.5	49.2	51.8	47.7	45.2	55.1	54.6	60.5	64.2	56.4
San Ardo .....	.....	.....	70.0	61.6	51.5	50.5	48.0	46.7	56.8	57.7	63.7	67.7	57.4
San Diego	67.1	70.5	66.6	59.7	56.0	56.0	54.2	52.9	57.2	59.0	62.1	64.6	60.5
San Fernando	84.3	83.8	77.6	67.3	64.4	60.2	57.1	54.7	64.9	70.6	74.9	77.1	69.7
San Francisco	59.1	58.5	60.5	57.1	55.1	53.1	51.8	47.0	54.3	54.5	55.8	58.0	55.4
San Geronio	69.1	79.1	71.6	58.9	52.8	50.5	48.8	45.2	58.6	57.5	64.2	72.8	60.8
San José	66.3	66.7	63.7	57.3	52.3	52.4	50.3	48.2	54.8	54.3	58.6	63.9	57.4
San Mateo	68.4	67.5	65.1	59.2	54.0	54.1	50.3	47.0	55.1	57.2	60.6	64.9	58.6
San Miguel .....	.....	.....	.....	56.6	46.8	46.9	48.0	40.3	57.4	56.8	64.5	69.9	54.8
Santa Cruz	66.6	65.0	59.7	56.7	55.7	54.9	52.2	49.3	58.2	57.7	59.7	63.9	58.3
Santa Monica	66.7	69.3	66.5	61.4	58.5	52.4	50.6	48.7	53.2	55.1	62.1	65.1	59.1
Selma	85.9	83.3	75.2	62.6	49.5	47.8	45.2	47.1	60.0	66.3	73.0	79.4	64.6
Soledad	66.7	68.5	67.2	56.5	50.1	51.9	46.4	45.2	57.3	55.7	59.8	66.0	57.6
Soquel	62.6	61.3	61.3	51.2	51.4	59.0	47.7	49.9	58.5	58.2	58.6	58.8	56.5
South Side	76.1	78.6	75.0	58.5	52.2	53.4	48.6	43.2	57.1	55.6	.....	.....	59.8
South Vallejo	72.4	71.7	69.3	61.3	55.6	54.6	53.1	49.4	60.3	62.7	65.3	68.3	62.0
Spadra	70.9	71.9	66.5	53.2	54.8	56.7	54.2	51.6	61.8	59.4	66.9	69.5	61.4
Stockton	74.6	73.1	68.2	59.0	51.0	50.9	48.5	45.9	58.0	59.5	64.0	68.2	60.1
Suisun	72.7	72.4	69.7	61.3	52.5	53.4	51.7	48.5	59.9	61.0	64.7	68.8	61.4
Summit	58.9	59.8	54.7	39.8	31.2	34.9	28.4	22.3	35.0	35.2	43.7	52.4	41.4
Summer	88.2	83.8	72.8	56.5	46.7	49.5	46.4	50.1	63.1	65.3	75.7	85.2	65.3
Tehama	81.0	80.5	74.1	58.7	50.7	49.1	49.0	44.8	57.7	56.9	63.6	73.4	61.6
Tehachapi	79.9	77.7	66.9	50.7	42.4	44.3	37.4	33.3	49.7	49.9	56.2	63.9	54.4
Templeton .....	.....	.....	.....	.....	44.8	48.0	46.1	47.1	59.1	61.7	67.6	71.2	55.7
Towles	71.7	69.8	67.1	54.1	49.7	51.9	46.3	34.5	52.2	50.6	55.3	62.1	55.5
Tracy	84.1	81.4	73.5	63.8	53.2	52.1	50.9	54.6	62.1	65.0	66.2	75.4	65.2
Traver	81.4	81.5	72.9	56.8	47.8	50.0	46.2	47.0	62.5	64.3	.....	83.0	63.0
Truckee	64.9	61.8	52.3	39.1	32.0	35.9	29.1	24.0	38.2	38.5	50.0	57.5	43.6
Tulare	83.7	87.3	78.1	64.8	49.5	50.7	47.1	48.1	58.8	64.4	69.3	79.1	65.1
Turlock	81.6	82.6	74.1	61.2	55.4	55.4	51.7	52.6	61.7	66.4	73.8	77.5	66.2
Williams	85.8	82.7	75.7	66.6	49.5	52.6	48.6	44.4	59.9	63.9	74.0	78.9	65.2
Willows	82.7	83.1	80.0	64.2	52.9	51.0	50.0	45.7	60.2	64.7	73.1	80.0	65.6
Woodland	80.2	78.6	71.7	55.5	53.3	51.1	49.2	47.6	60.8	62.0	70.0	81.6	63.5

MONTHLY AND ANNUAL MEAN TEMPERATURES

(In degrees Fahrenheit) at Points in California during Year ending June 30, 1888.

Prepared by SERGEANT NELSON GOROM, Observer Signal Corps, San Francisco, California.

PLACE.	1887.						1888.						Mean.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
Almaden	68.8	67.1	69.5	65.6	56.1	50.7	46.6	54.2	54.5	61.2	62.3	68.6	60.4
Anaheim	72.3	71.2	71.7	70.6	61.4	53.8	55.6	58.5	59.5	66.9	67.9	73.5	65.2
Antioch	74.8	73.6	73.3	68.4	57.0	49.2	44.6	52.6	54.0	60.0	65.9	67.9	61.8
Aptos	61.0	60.1	60.1	59.6	54.5	49.2	46.0	51.9	53.0	58.4	59.7	67.9	56.8
Athlone	83.2	79.4	75.3	67.1	54.9	45.5	43.4	52.2	54.8	67.6	71.9	76.4	64.3
Auburn	76.0	72.5	71.0	67.1	53.4	44.8	40.4	50.9	51.3	61.4	61.0	66.9	59.7
Beaumont	77.9	77.2	74.1	66.2	60.7	47.3	41.5	51.3	48.2	62.0	62.7	69.9	61.6
Bishop Creek	87.6	82.0	76.9	64.9	50.0	44.3	33.4	50.9	56.3	69.6	78.1	86.0	65.0
Boca	64.9	63.5	55.9	49.6	33.5	22.4	15.8	27.6	33.4	42.5	53.4	58.4	43.4
Borden	81.4	79.2	76.5	68.3	55.3	46.6	43.8	51.7	54.7	69.5	70.5	75.4	64.4
Brentwood	80.3	79.6	75.9	63.5	52.8	47.2	42.2	51.3	57.8	67.6	75.6	77.8	64.3
Brighton	79.9	76.2	76.8	70.4	57.7	49.5	45.4	54.5	55.3	66.9	69.1	74.6	64.7
Byron	84.8	76.5	74.5	.....	54.5	48.3	41.8	56.5	59.4	69.2	69.5	73.2	64.8
Caliente	86.0	83.1	74.3	68.2	56.6	46.8	47.0	55.4	53.3	67.9	74.1	.....	64.8
Calistoga	70.9	65.8	67.4	65.5	51.8	49.4	44.4	53.7	55.1	60.3	58.5	64.8	59.0
Chico	88.3	80.1	77.7	70.5	55.2	48.5	42.6	54.9	56.4	70.9	71.6	75.1	66.0
Cisco	60.4	57.9	55.8	51.9	41.3	32.1	27.8	33.0	34.8	44.8	48.2	51.1	44.9
Coles .....	.....	.....	.....	.....	.....	.....	40.8	40.6	39.9	51.6	53.0	58.0	47.3
Colfax	75.5	71.7	69.0	65.9	53.9	42.4	37.8	47.8	49.0	60.4	61.2	65.4	58.3
Colton	78.5	76.9	73.8	65.6	57.0	49.3	47.7	55.6	62.0	65.0	69.0	73.2	64.5
Corning	87.3	70.1	75.7	70.1	54.0	48.2	39.9	49.0	50.1	69.5	71.4	72.6	64.0
Davis	74.4	74.1	70.6	69.0	55.5	49.0	43.4	50.7	53.1	65.1	66.8	69.9	61.8
Delano	91.0	88.2	85.0	72.0	64.9	50.7	44.2	49.0	50.2	66.6	70.9	76.3	67.4
Delta	73.9	.....	72.7	61.0	47.7	39.4	33.7	45.8	44.4	62.3	66.4	67.4	55.9
Dunnigan	79.3	77.8	73.8	67.9	56.8	48.8	45.0	57.2	61.8	71.5	73.1	79.0	66.0
Dunsmuir .....	.....	.....	.....	.....	.....	.....	.....	43.8	53.9	51.0	52.8	.....	.....
Elmira	71.8	71.4	72.8	68.6	55.4	49.8	44.6	54.4	56.6	64.4	65.4	73.1	62.4
Emigrant Gap	68.0	66.9	61.9	57.9	47.1	38.4	32.3	40.1	38.7	53.9	53.0	54.7	51.1
Eureka	52.5	54.5	53.4	52.3	50.6	47.5	44.6	48.1	47.7	50.9	53.0	58.8	51.2
Farmington	77.8	75.4	74.1	69.2	61.3	45.8	44.5	53.1	54.5	66.3	66.5	72.8	63.4
Fort Bidwell	67.9	65.7	59.2	51.0	39.6	31.3	21.8	36.6	36.6	51.6	53.8	55.6	47.6
Fresno	87.5	82.6	75.2	68.5	56.3	46.3	44.1	53.2	54.1	67.1	68.6	74.0	64.8
Galt	79.8	77.9	76.4	63.4	60.8	52.1	46.8	47.5	53.1	68.2	68.7	72.7	64.0
Gilroy	65.0	63.7	67.9	64.1	52.7	46.3	44.8	51.1	52.3	62.0	61.8	71.9	58.6
Goshen	88.7	85.3	82.4	71.3	57.5	44.4	44.6	54.1	56.9	70.9	74.6	80.7	67.6
Hollister	64.9	62.4	65.0	62.1	56.1	52.2	47.6	54.3	54.9	60.9	61.3	67.9	59.1
Hornbrook .....	.....	75.3	68.8	57.3	44.7	35.0	22.0	41.3	47.0	58.5	63.9	66.0	52.7
Indio	95.7	94.7	87.9	74.9	62.9	54.1	47.8	60.3	62.3	75.6	74.2	89.7	73.3
Ione	76.3	75.6	71.9	61.1	50.6	45.1	42.6	50.6	50.5	61.3	65.4	75.1	60.5
Kings City	69.4	64.8	64.8	62.4	54.6	44.4	44.2	48.2	47.1	55.3	63.9	68.7	57.3
Keeler	81.1	79.7	72.3	63.4	52.2	42.9	35.3	47.8	50.6	63.4	66.5	73.9	60.8
Keene	75.5	64.2	64.7	62.5	55.0	43.4	41.1	47.5	50.5	60.7	63.5	68.3	58.1
Kingsburg	84.5	80.7	75.7	64.3	52.3	43.0	41.3	48.5	52.7	70.2	67.9	74.7	63.0
Knights Landing	73.7	72.8	67.5	65.7	56.8	46.3	41.3	50.5	51.0	60.3	66.3	67.2	60.0
Lathrop	74.9	71.9	70.3	63.2	52.1	46.6	44.9	52.6	53.3	64.3	65.7	72.6	61.0
Lemoore	84.0	79.8	73.7	70.9	55.4	45.0	43.8	50.6	53.6	66.8	65.2	74.6	63.7
Livermore	66.3	66.4	67.1	66.4	57.3	52.5	46.9	53.7	53.7	59.9	58.8	64.0	59.4
Livingston	84.8	79.1	79.1	70.2	60.9	49.6	48.2	56.4	57.8	68.3	70.6	74.9	66.7
Los Angeles	69.5	68.5	68.2	68.5	60.0	53.7	50.0	54.4	55.1	61.9	60.8	67.5	61.5
Mammoth Tank	100.5	90.4	88.4	80.4	65.8	51.0	49.6	59.4	63.0	82.0	82.6	93.4	75.5
Martinez	66.7	61.3	62.9	62.4	54.2	50.3	44.0	53.1	49.7	58.9	58.6	70.7	57.7
Marysville	74.1	71.3	69.4	67.1	58.6	53.3	54.5	57.5	63.9	70.4	70.2	78.8	65.8
Menlo Park	64.2	63.6	64.6	60.8	53.6	48.3	45.8	52.5	51.4	59.0	60.4	67.0	57.6
Merced	82.5	68.5	74.6	72.0	58.8	49.4	47.1	54.6	54.2	65.9	69.3	76.3	64.4
Modesto	79.3	78.0	74.2	65.8	53.0	44.9	44.2	50.8	54.4	66.2	66.1	73.4	62.5
Mojave	84.9	82.9	77.6	71.5	60.0	50.1	43.7	52.1	53.7	71.0	67.6	73.1	65.7
Montague .....	.....	.....	.....	.....	.....	.....	.....	49.8	49.9	61.9	65.4	65.6	58.5
Monterey	61.6	62.1	62.6	61.4	57.5	53.3	49.7	54.8	54.6	57.5	60.0	64.8	58.3
Napa	68.1	65.3	64.3	61.6	51.5	48.6	44.6	49.5	51.8	56.4	60.7	69.8	57.7
Newhall	75.6	72.2	72.4	65.6	55.8	46.5	45.5	50.9	54.9	65.1	64.0	71.5	61.7
Niles	63.2	60.3	63.6	64.6	62.7	.....	.....	50.5	54.8	61.7	63.9	.....	60.6
Oakland	58.2	59.0	61.0	61.7	52.9	51.3	47.4	52.6	51.0	57.6	57.0	62.9	56.0
Orland	84.9	81.2	77.4	71.9	61.0	50.5	44.5	54.8	53.9	69.0	70.7	75.3	66.3
Pajaro	60.2	58.6	61.4	61.6	53.8	51.0	47.1	53.1	52.1	56.0	58.3	63.1	56.4

MONTHLY AND ANNUAL MEAN TEMPERATURES—Continued.

PLACE.	1887.						1888.						Mean.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June	
Paso Robles.....	72.5	69.0	69.3	61.7	52.4	46.7	41.1	47.8	51.9	62.3	64.0	71.7	59.2
Petaluma.....	66.9	65.1	66.0	66.0	54.7	52.5	44.2	50.8	49.0	57.3	57.8	61.2	57.6
Pleasanton.....	70.4	68.3	68.3	65.1	53.8	51.3	48.1	53.7	54.9	61.8	63.4	69.8	60.7
Red Bluff.....	83.9	81.3	76.4	71.1	55.2	48.2	40.9	53.9	54.5	67.0	68.1	70.7	64.3
Redding.....	79.8	76.8	71.3	70.5	56.0	45.6	39.2	52.4	55.3	69.6	74.2	72.5	63.6
Rocklin.....	76.6	73.0	72.5	67.1	53.4	46.6	42.7	49.8	52.5	59.7	64.0	70.2	52.3
Sacramento.....	70.2	69.1	70.4	66.5	54.7	46.9	42.8	52.6	53.6	62.3	61.8	67.7	59.9
Salinas.....	60.1	59.3	60.3	61.1	51.3	45.8	44.1	49.7	48.6	56.2	58.1	68.4	55.2
San Ardo.....	68.2	68.4	67.4	63.1	52.8	46.4	44.6	50.8	52.0	60.0	62.7	70.1	58.9
San Diego.....	66.4	66.2	65.7	64.5	59.2	54.6	51.6	54.9	55.8	60.8	61.2	65.9	60.6
San Fernando.....	78.9	80.4	.....	70.0	67.1	54.3	44.6	52.4	55.6	69.5	62.1	75.1	64.5
San Francisco.....	55.2	56.3	60.4	62.9	55.2	51.7	46.3	52.8	52.5	56.2	55.4	61.0	55.5
San José.....	64.8	63.3	64.7	62.5	54.6	50.5	46.4	52.6	52.8	58.3	59.8	65.2	58.0
San Mateo.....	63.6	63.6	64.3	64.4	51.2	50.1	46.5	51.2	51.7	58.3	58.2	67.1	57.5
San Miguel.....	73.7	69.9	68.5	67.0	59.3	49.5	43.2	52.5	54.5	61.2	62.2	69.5	60.9
Santa Barbara.....	.....	.....	.....	.....	.....	49.8	48.4	56.1	54.8	62.6	62.8	70.7	57.9
Santa Cruz.....	61.9	62.3	65.1	64.4	55.7	53.0	49.2	53.1	54.8	59.3	59.3	67.5	58.8
Santa Monica.....	66.9	65.8	63.3	67.1	63.9	59.3	56.8	58.0	57.2	65.3	64.0	68.0	63.0
Selma.....	84.9	81.8	75.7	68.6	57.3	45.1	43.6	50.4	51.7	63.1	70.7	77.2	64.2
Sims.....	.....	.....	.....	.....	.....	.....	.....	.....	53.7	66.1	72.4	71.7	66.0
Sisson.....	.....	.....	.....	.....	.....	.....	.....	.....	43.4	60.3	45.4	57.1	51.6
Soledad.....	63.1	61.1	63.3	60.7	50.1	45.4	42.1	50.4	50.5	59.2	57.6	63.6	55.6
Soquel.....	59.1	58.0	56.1	64.6	58.4	52.1	50.3	52.2	53.6	59.6	61.0	68.4	57.8
South Side.....	77.0	75.5	73.9	67.7	59.1	50.7	46.0	52.3	51.5	63.5	61.5	70.0	62.4
South Vallejo.....	67.3	66.5	67.6	65.3	60.3	49.9	44.4	.....	53.4	57.0	57.8	63.7	59.4
Spadra.....	70.7	77.6	68.3	64.2	58.3	50.8	49.1	52.2	51.0	61.8	62.7	70.8	61.5
Stockton.....	70.3	68.4	68.5	63.9	53.4	46.7	44.3	51.1	53.6	62.3	62.0	68.1	59.4
Suisun.....	68.2	69.4	71.6	67.6	56.8	48.3	44.7	51.9	56.9	63.5	61.7	68.3	60.7
Summit.....	59.2	57.4	53.7	49.5	39.7	26.7	22.4	30.9	30.5	40.7	45.9	50.1	42.2
Summer.....	91.7	85.8	80.8	68.5	57.3	47.6	46.5	54.9	57.7	73.5	75.7	83.2	68.6
Tehama.....	77.9	72.5	75.1	67.5	57.5	46.5	41.1	54.6	54.7	65.9	65.4	68.6	62.3
Tehachapi.....	73.7	71.0	64.4	56.8	46.5	39.0	32.9	41.3	46.2	54.7	61.4	.....	53.4
Templeton.....	73.3	69.7	68.9	65.2	55.1	47.8	46.0	54.0	54.4	61.8	61.2	69.8	60.6
Towles.....	68.1	65.3	64.8	63.3	54.6	46.1	34.5	46.4	49.3	53.9	60.9	55.0	55.2
Tracy.....	81.3	76.3	73.4	67.6	56.8	49.2	47.6	51.4	52.5	65.4	68.3	72.6	63.5
Traver.....	84.6	79.1	74.1	.....	.....	46.5	.....	.....	54.8	65.2	76.4	83.0	70.5
Tropico.....	.....	.....	.....	.....	.....	47.3	48.3	52.7	55.7	64.3	65.7	71.8	58.0
Truckee.....	62.9	60.0	52.1	46.4	37.8	25.1	20.2	29.6	33.6	46.5	51.6	56.0	43.5
Tulare.....	84.8	80.8	78.6	71.6	58.1	43.3	44.0	51.5	57.0	73.0	75.0	80.5	66.5
Turlock.....	80.0	73.5	74.4	69.2	55.8	48.1	45.7	53.2	55.9	64.6	67.0	74.1	63.5
Williams.....	83.1	81.2	75.4	72.7	59.4	51.8	46.1	53.4	52.6	64.1	68.9	79.0	65.6
Willows.....	86.3	87.0	78.4	71.7	56.0	46.3	40.3	51.1	51.6	64.1	67.2	70.9	64.2
Woodland.....	82.8	78.6	77.1	78.1	68.1	51.9	43.2	46.1	48.1	51.7	62.5	67.3	63.0

SEASONAL RAINFALL.

Prepared in the Office of the Officer in Charge of the Pacific Coast Division Signal Ser-

STATIONS.	July, 1886	Aug., 1886	Sept., 1886	Oct., 1886	Nov., 1886	Dec., 1886	Jan., 1887	Feb., 1887	March, 1887
Almaden, Santa Clara Co.	—	—	—	—	0.80	—	1.52	8.68	0.92
Anaheim, Los Angeles Co. ....	.00	T.	.00	.00	0.33	T.	0.43	5.71	.00
Aptos, Santa Cruz Co. ....	.00	.00	.00	0.70	0.84	1.53	0.95	8.82	0.76
Auburn, Placer Co. ....	.00	.00	.00	0.89	1.26	4.88	2.04	12.38	1.50
Athlone, Merced Co. ....	.00	.00	.00	0.32	0.92	0.69	0.38	3.52	0.23
Antioch, Contra Costa Co. ....	.00	.00	.00	0.40	T.	1.02	0.38	3.87	0.49
Battle Mountain, Lander Co., Nev.	0.38	.00	0.18	1.20	1.50	0.44	0.73	1.15	0.30
Benson, Cochise Co., A. T.	1.41	2.68	0.17	0.25	.00	0.19	.00	0.34	.00
Beowawe, Eureka Co., Nev.	0.25	.00	.00	1.20	0.80	0.68	0.20	1.20	.00
Bishop, Inyo Co. ....	.00	.00	.00	.00	.00	0.20	0.65	1.58	.00
Blue Creek, Box Elder Co., Utah.	0.88	0.55	0.91	0.85	1.05	0.28	0.75	0.78	0.30
Boca, Nevada Co.	—	.00	0.10	0.70	0.70	0.70	2.40	12.70	.00
Borden, Fresno Co. ....	.00	.00	.00	0.38	0.65	0.57	0.25	2.24	0.30
Brentwood, Contra Costa Co. ....	.00	.00	.00	0.15	0.24	0.87	0.38	5.05	0.61
Browns, Humboldt Co., Nev. ....	.00	.00	.00	0.62	0.10	0.47	T.	1.29	0.25
Brighton, Sacramento Co. ....	.00	.00	.00	0.85	0.12	1.47	0.80	4.87	1.08
Byron, Contra Costa Co. ....	.00	.00	.00	0.89	.00	0.95	0.48	4.43	0.19
Caliente, Kern Co.	T.	.00	.00	T.	1.45	1.33	0.38	2.79	0.07
Calistoga, Napa Co. ....	.00	.00	.00	1.25	.00	3.95	2.22	11.18	1.58
Carlin, Elko Co., Nev.	0.08	.00	.00	0.24	0.85	0.85	0.61	2.00	0.14
Casa Grande, Pinal Co., A. T.	0.33	1.40	.00	.00	0.35	.00	.00	0.40	.00
Cisco, Placer Co. ....	.00	.00	.00	1.45	1.00	6.10	4.90	22.85	0.80
Chico, Butte Co. ....	.00	.00	.00	0.97	0.15	2.78	0.68	6.53	1.38
Colfax, Placer Co. ....	.00	.00	.00	1.96	0.46	6.12	2.99	9.24	1.31
Corinne, Box Elder Co., Utah	0.65	0.15	1.75	1.50	1.40	0.25	0.88	1.35	0.70
Corning, Tehama Co. ....	.00	.00	.00	0.30	.00	2.01	0.45	6.81	1.46
Chualar, Monterey Co. ....	.00	.00	.00	0.15	0.70	0.40	—	2.50	0.60
Colton, San Bernardino Co. ....	.00	.00	.00	.00	0.80	.00	0.21	3.64	.00
Davisville, Yolo Co. ....	.00	.00	.00	0.48	.00	1.81	0.99	6.14	0.78
Delta, Shasta Co. ....	.00	.00	T.	1.30	0.30	8.81	3.84	10.27	3.37
Delano, Kern Co. ....	.00	.00	.00	T.	0.69	0.34	0.20	2.63	.00
Deming, Grant Co., N. M.	1.13	4.19	4.36	0.50	.00	.06	.00	0.20	.00
Dunnigan, Yolo Co. ....	.00	.00	.00	0.51	T.	1.91	0.97	6.93	1.13
Elko, Elko Co., Nev. ....	.00	.00	.00	0.20	0.60	—	0.02	1.60	.00
Elmira, Solano Co. ....	.00	.00	.00	0.28	.00	2.74	1.01	7.10	0.55
Emigrant Gap, Placer Co. ....	.00	.00	.00	2.96	0.40	8.00	4.12	18.80	2.03
Farmington, San Joaquin Co. ....	.00	.00	.00	0.27	0.89	1.37	0.36	3.37	0.29
Fresno, Fresno Co. ....	.00	.00	.00	0.47	0.70	0.34	0.31	2.80	0.09
Galt, Sacramento Co. ....	.00	.00	.00	0.92	0.85	1.76	0.61	5.35	1.11
Gilroy, Santa Clara Co. ....	.00	.00	.00	0.78	0.33	1.09	0.90	5.14	0.82
Golconda, Humboldt Co.	0.42	.00	.00	0.91	0.21	0.25	0.08	1.15	T.
Goshen, Tulare Co. ....	.00	.00	.00	0.10	0.55	0.69	0.35	2.26	0.56
Halleck, Elko Co., Nev. ....	.00	.00	.00	1.19	0.80	0.20	0.30	1.85	.00
Hawthorn, Esmeralda Co., Nev.	T.	.00	.00	.00	.00	—	T.	1.85	.00
Hollister, San Benito Co. ....	.00	.00	.00	0.38	0.42	0.54	0.57	3.63	0.55
Hot Springs, Churchill Co., Nev. ....	.00	.00	.00	0.46	0.50	T.	0.12	1.80	.00
Humboldt, Humboldt Co., Nev.	T.	.00	.00	0.10	0.60	0.24	.00	1.25	.00
Indio, San Diego Co. ....	.00	.00	.00	.00	0.12	.00	.00	0.93	.00
Ione, Amador Co. ....	.00	.00	.00	1.20	0.70	0.64	0.83	7.26	1.55
Keeler, Inyo Co.	0.14	0.08	.00	0.01	0.08	.00	T.	0.75	.00
Keene, Kern Co.	T.	0.02	.00	T.	1.95	1.10	0.51	3.20	0.92
Kelton, Box Elder Co., Utah	1.22	0.44	0.35	0.58	1.25	0.32	0.04	0.48	0.03
Kingsburg, Fresno Co. ....	.00	.00	.00	0.20	0.58	0.43	0.36	2.48	0.13
Kings City, Monterey Co.	—	—	—	0.14	0.36	0.03	0.38	5.08	0.18
Knights Landing, Yolo Co. ....	.00	.00	.00	0.23	.00	1.60	1.00	6.60	0.75
Lathrop, San Joaquin Co. ....	.00	.00	.00	0.21	0.83	0.40	0.21	2.84	0.14
Lemoore, Fresno Co.	T.	.00	.00	0.25	0.30	0.15	0.23	2.19	0.10
Livermore, Alameda Co.	0.40	.00	.00	0.30	0.70	0.81	0.90	6.23	0.23
Livingston, Merced Co. ....	.00	.00	.00	0.16	0.53	0.46	0.37	2.41	0.43
Lordsburg, Grant Co., N. M.	1.54	1.65	1.17	0.17	0.20	.00	.00	0.12	.00
Mammoth Tank, San Diego Co. ....	.00	0.01	.00	0.01	.00	0.24	.00	1.38	.00
Maricopa, Pinal Co., A. T. ....	.00	0.75	.00	1.00	.00	.00	.00	0.57	.00
Martinez, Contra Costa Co.	0.07	.00	.00	0.35	0.58	1.29	0.94	7.46	0.56
Marysville, Yuba Co. ....	.00	.00	.00	0.63	T.	2.20	0.73	6.09	1.02

"T"—Trace of precipitation. Too small to be measured.

FOR 1886, 1887, 1888.

vice, U. S. A., by FRANCIS CHREIGHTON, Observer Signal Corps, San Francisco, California.

April, 1887	May, 1887	June, 1887	July, 1887	Aug., 1887	Sept., 1887	Oct., 1887	Nov., 1887	Dec., 1887	Jan., 1888	Feb., 1888	March, 1888	April, 1888	May, 1888	June, 1888
1.60	.00	.00	.00	.00	0.20	0.05	0.78	4.44	4.51	1.24	4.73	0.32	0.64	0.16
2.21	T.	.00	.00	.00	T.	0.75	0.92	2.16	6.29	0.92	5.32	T.	.00	.00
1.61	0.19	.00	.00	.00	0.47	0.05	1.11	3.72	5.85	1.59	3.25	0.50	0.79	0.25
4.34	0.30	.00	.00	T.	1.09	.00	1.22	7.90	7.07	1.40	1.70	0.80	0.40	1.55
1.62	.00	0.23	.00	.00	0.58	.00	0.23	1.11	2.29	.00	2.05	0.30	0.00	.00
0.95	.00	.00	.00	.00	0.41	.00	0.29	2.30	2.84	1.24	5.90	.00	0.50	.00
1.24	0.14	0.50	0.12	0.18	—	.00	0.10	1.50	3.12	0.30	0.25	0.35	1.50	0.51
T.	0.08	.00	1.49	2.39	2.92	0.45	0.37	0.15	0.04	.00	0.30	.00	0.37	.00
0.07	.00	.00	.00	.00	.00	.00	0.50	0.20	1.10	0.10	.00	0.15	0.35	0.59
0.35	0.55	0.35	.00	.00	0.15	0.15	0.05	1.10	1.37	0.47	0.92	0.05	.00	0.35
0.65	0.05	0.10	0.10	.00	0.40	.00	0.30	0.70	2.10	0.15	0.55	0.45	0.10	0.05
1.80	T.	—	—	T.	—	.00	0.30	—	3.75	1.10	2.40	0.40	0.51	0.10
2.37	.00	.00	.00	.00	0.46	0.05	0.28	0.78	0.93	0.17	1.98	0.11	0.47	.00
1.61	.00	.00	.00	.00	0.50	.00	0.40	2.62	4.24	0.40	2.28	0.02	0.59	.00
0.50	1.10	0.20	.00	0.15	0.25	.00	.00	—	0.40	0.35	.00	0.20	0.38	0.08
1.98	.00	.00	.00	.00	.00	.00	0.57	2.70	4.67	0.62	2.86	0.30	0.59	—
1.21	.00	.00	.00	.00	.00	T.	0.42	2.90	2.67	1.25	1.77	.00	0.75	.00
2.66	0.21	.00	.00	.00	.00	0.63	0.05	1.43	—	1.14	1.50	.00	0.81	—
2.82	T.	.00	.00	.00	0.18	.00	1.50	4.82	7.87	2.87	5.64	0.26	0.20	1.16
1.62	0.08	0.13	0.35	0.01	0.10	.00	0.20	0.70	2.20	0.20	.00	0.50	1.00	0.25
0.30	0.20	0.40	1.07	0.97	1.99	0.95	1.28	0.15	0.61	.00	0.45	.00	—	.00
3.95	0.40	.00	T.	.00	0.15	.00	1.60	8.80	9.75	2.72	6.10	0.20	1.50	1.90
2.31	.00	0.96	.00	.00	.00	.00	1.05	2.53	4.95	1.15	1.94	0.15	.00	1.20
4.92	0.72	.00	.00	.00	0.68	0.84	1.61	6.00	13.28	2.18	2.80	0.95	0.17	2.60
1.70	0.35	0.30	0.35	0.25	0.15	.00	0.18	1.10	2.70	0.75	1.35	1.10	0.30	0.40
2.86	0.28	0.18	.00	.00	.00	.00	1.37	3.70	3.64	2.09	3.20	0.19	0.40	0.79
1.15	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—
1.94	T.	.00	.00	.00	.00	.00	—	0.80	—	—	3.08	0.43	.00	.00
2.03	.00	.00	.00	.00	0.05	.00	0.50	2.52	4.14	1.10	2.80	0.30	0.50	.00
5.53	1.26	0.82	.00	.00	.00	.00	0.75	2.23	10.45	4.67	1.70	.00	2.45	3.30
1.44	0.68	.00	.00	.00	.00	.00	0.03	0.60	2.21	—	0.94	.00	0.15	.00
.00	.00	.00	2.02	3.46	3.39	2.13	0.31	0.05	0.26	—	0.24	0.50	0.70	0.50
2.41	.00	.00	.00	.00	.00	.00	0.83	3.30	4.18	1.03	3.39	.00	1.62	.00
0.70	.00	0.23	0.40	0.10	0.15	.00	0.20	0.98	1.08	0.20	0.64	0.80	1.21	.00
2.06	.00	.00	.00	.00	.00	.00	0.76	3.41	4.81	1.49	3.92	T.	0.45	0.19
6.17	1.02	1.14	.00	0.13	0.05	3.00	1.50	7.70	17.05	3.92	5.42	3.30	2.33	3.04
2.89	.00	T.	.00	.00	0.39	T.	0.20	2.32	3.82	0.15	3.52	0.07	0.92	.00
2.65	0.03	0.02	.00	.00	0.52	0.29	0.27	0.67	1.84	0.10	1.99	0.15	0.48	.00
2.56	.00	.00	.00	.00	0.15	.00	0.38	3.27	3.97	0.46	3.14	0.40	0.39	.00
2.05	.00	.00	.00	.00	0.43	.00	1.15	4.32	5.35	0.77	3.92	0.40	0.44	.00
0.60	0.07	0.85	.00	.00	.00	.00	0.10	0.30	0.70	—	.00	0.95	1.25	0.45
2.85	1.10	.00	.00	.00	0.50	0.17	0.12	1.18	2.11	0.19	1.33	0.12	0.29	.00
0.18	0.12	.00	0.25	0.10	0.40	.00	0.60	0.90	0.85	0.25	0.10	0.88	0.67	0.70
0.08	T.	1.13	0.25	.00	0.30	.00	0.10	0.42	2.38	0.26	0.30	—	1.20	—
1.32	0.04	0.02	.00	.00	0.43	.00	0.60	1.54	3.61	0.97	2.75	0.40	0.80	0.02
.00	.00	0.12	T.	.00	.00	.00	.00	0.15	0.60	0.20	0.05	0.05	0.21	.00
.00	.00	1.30	.00	0.20	.00	.00	.00	0.50	0.60	—	T.	0.25	0.20	.00
0.30	.00	.00	.00	T.	0.05	0.15	.00	.00	0.75	.00	.00	.00	.00	.00
1.44	0.10	.00	.00	.00	0.67	.00	0.25	3.17	4.60	0.58	1.16	0.70	0.22	.00
1.18	0.04	T.	0.52	.00	1.05	0.84	0.01	—	0.70	1.21	0.30	0.12	0.30	0.20
2.73	T.	0.20	T.	.00	0.12	1.32	0.50	1.72	1.30	1.70	2.69	0.78	2.03	.00
1.57	.00	0.33	1.32	0.25	0.10	.00	0.40	0.60	1.50	0.35	0.70	0.30	0.20	1.13
2.10	0.42	.00	.00	.00	0.53	.00	0.15	1.16	2.29	0.29	1.64	.00	0.21	.00
0.58	0.02	0.09	.00	.00	0.06	0.05	0.31	1.99	2.85	0.70	2.76	0.10	0.01	.00
2.30	.00	.00	.00	.00	.00	.00	0.57	3.26	4.18	0.91	2.51	0.07	0.43	0.34
1.25	.00	.00	.00	.00	.00	.00	0.30	2.27	2.46	0.41	1.09	0.49	—	.00
2.07	1.03	0.12	.00	.00	0.15	0.33	0.33	0.90	1.89	.00	1.28	.00	0.88	.00
1.60	.00	.00	.00	.00	0.80	.00	0.61	3.51	3.20	0.94	2.54	0.60	0.66	0.30
1.46	.00	.00	.00	.00	0.17	.00	0.11	1.81	2.79	0.29	2.07	0.26	0.22	.00
.00	0.10	0.30	3.17	2.67	1.31	.00	0.32	0.70	0.44	0.10	0.88	.00	.00	0.28
0.13	.00	.00	.00	.00	0.33	0.03	0.20	0.05	0.05	0.07	0.05	0.03	0.01	.00
0.05	0.25	.00	—	—	—	0.28	1.13	.00	.00	0.12	0.48	.00	.00	.00
1.94	.00	.00	.00	.00	0.33	.00	0.30	0.95	4.24	1.65	3.54	.00	0.10	0.15
1.90	0.10	0.09	.00	.00	.00	.00	1.07	3.70	4.58	—	2.55	.00	0.41	0.32

SEASONAL RAIN

STATIONS.	July, 1886	Aug., 1886	Sept., 1886	Oct., 1886	Nov., 1886	Dec., 1886	Jan., 1887	Feb., 1887	March, 1887
Menlo Park, San Mateo Co.	0.24	.00	.00	0.86	0.40	1.26	0.72	4.92	0.46
Merced, Merced Co. ....	.00	.00	.00	0.47	0.25	0.58	0.13	2.83	0.20
Modesto, Stanislaus Co. ....	.00	.00	.00	0.25	1.01	0.65	0.09	2.16	0.34
Mojave, Kern Co.	T.	.00	.00	T.	0.76	0.08	T.	4.09	.00
Monterey, Monterey Co. ....	.00	.00	.00	0.70	0.78	0.60	0.35	4.92	0.60
Napa, Napa Co. ....	.00	.00	.00	1.16	0.11	2.58	1.87	10.68	0.67
Newhall, Los Angeles Co. ....	.00	.00	.00	.00	0.87	0.21	.00	12.38	6.15
Niles, Alameda Co. ....	.00	.00	.00	0.57	1.27	1.15	1.20	9.44	0.83
Arcata, Humboldt Co. ....	.00	.00	.00	3.19	1.77	9.03	9.43	8.73	2.65
Carson City, Ormsby Co., Nev.	1.25	.00	0.30	0.21	0.44	0.72	1.01	3.27	0.23
Crescent City, Del Norte Co.	1.02	0.04	0.12	5.12	1.26	19.28	17.94	9.41	7.24
Berkeley, Alameda Co. ....	.00	.00	.00	.00	.00	3.93	1.66	9.44	0.98
Denverton, Solano Co. ....	.00	T.	.00	1.27	0.27	1.51	0.83	5.64	0.81
Downey, Los Angeles Co. ....	.00	0.38	.00	.00	0.72	0.08	0.02	5.64	0.04
Evergreen .....	.00	.00	.00	.00	.00	0.96	0.79	6.13	0.75
Elsinore, San Diego Co. ....	.00	.00	.00	.00	.00	0.09	0.16	7.01	0.05
Folsom, Sacramento Co. ....	.00	.00	.00	1.34	0.55	3.35	1.27	9.21	1.30
Fouts Springs, Colusa Co. ....	.00	.00	.00	0.70	0.20	2.83	2.00	7.88	2.12
Fort Jones, Siskiyou Co.	2.13	0.85	.00	1.86	0.80	6.62	5.28	4.95	1.07
Grass Valley, Nevada Co. ....	.00	.00	.00	.00	.00	1.96	.00	16.53	1.69
Jolon, Monterey Co. ....	.00	.00	.00	0.35	0.48	0.61	0.57	8.52	0.38
La Grange, Stanislaus Co. ....	.00	.00	.00	0.22	1.20	0.75	0.51	5.11	0.04
Los Banos, Merced Co. ....	.00	.00	.00	0.42	0.18	0.21	0.06	1.50	0.44
Lugonia, San Bernardino Co. ....	.00	.00	.00	0.07	1.13	0.07	0.09	5.05	0.19
Nordhoff, Ventura Co. ....	.00	.00	.00	0.36	1.10	0.76	0.22	16.81	0.44
Poway, San Diego Co.	T.	0.02	.00	0.10	1.50	0.20	0.09	4.87	0.34
Sonoma, Sonoma Co.	T.	.00	T.	0.95	0.27	2.36	1.94	11.77	0.91
Santa Clara, Santa Clara Co. ....	.00	.00	0.01	0.06	7.58	.00	.00	6.94	0.70
Shingle Springs, El Dorado Co. ....	.00	.00	.00	1.66	0.93	3.50	1.67	12.21	1.45
Upper Mattole, Humboldt Co. ....	.00	.00	.00	.00	.00	17.88	1.61	11.91	3.34
Vichy Springs, Mendocino Co. ....	.00	.00	.00	.00	.00	.00	2.17	7.59	1.60
Vacaville, Solano Co. ....	.00	.00	.00	.00	.00	2.39	1.61	8.44	1.17
Wheatland, Yuba Co. ....	.00	.00	.00	.00	.00	1.83	0.94	5.87	1.33
Santa Maria, Santa Barbara Co. ....	.00	.00	.00	0.06	0.59	0.72	0.50	5.95	0.25
Point Conception .....	.00	9.17	.00	0.04	0.48	.00	0.20	4.92	.00
Año Nuevo Island .....	.00	.00	.00	1.45	0.75	1.95	1.36	6.16	0.39
Pigeon Point .....	.00	.00	.00	1.65	0.35	0.72	0.87	5.86	0.18
Point Mentora	0.09	.00	.00	1.80	0.46	2.26	1.96	8.14	0.78
Farallone Islands .....	.00	.00	0.50	1.15	0.55	1.40	0.80	7.52	0.45
Point Benito .....	.00	.00	.00	1.56	0.70	2.53	1.56	10.41	1.22
Yerba Buena Island .....	.00	.00	0.02	1.35	0.48	1.82	0.81	6.89	0.50
East Brother Island .....	.00	.00	.00	0.36	0.08	1.07	0.17	3.01	0.16
Point Reyes	0.13	.00	.00	0.55	1.45	1.76	0.35	3.90	0.53
Point Arena .....	.00	.00	.00	1.07	0.55	4.68	3.07	5.04	1.69
Crescent City .....	.00	.00	.00	4.09	.00	12.60	12.90	7.68	4.63
Humboldt	0.02	.00	.00	2.23	0.85	8.19	7.32	7.11	2.32
Orland, Colusa Co. ....	.00	.00	.00	0.50	T.	1.77	0.33	3.74	1.63
Ogden, Weber Co., Utah .....	.00	0.42	1.23	1.97	1.72	0.59	1.80	2.28	0.49
Oakland, Alameda Co.	0.08	.00	.00	1.60	0.25	2.96	1.31	8.01	0.65
Otego, Elko Co., Nevada .....	.00	0.36	0.17	1.66	0.45	0.51	1.07	1.70	0.35
Pajaro, Monterey Co. ....	.00	.00	.00	0.85	0.60	1.24	1.57	5.95	0.61
Palisade, Eureka Co., Nevada .....	.00	.00	0.10	0.40	1.25	0.37	0.45	2.12	.00
Pantano, Pima Co., Arizona	1.00	2.54	2.24	0.46	0.50	.00	.00	1.15	.00
Paso Robles, San Luis Obispo Co. ....	.00	.00	.00	.00	0.37	0.69	0.51	6.14	0.34
Petaluma, Sonoma Co. ....	.00	.00	0.02	0.69	0.57	1.21	1.25	10.43	0.79
Pleasanton, Alameda Co. ....	.00	.00	.00	0.39	0.73	0.87	0.79	5.93	0.68
Redding, Shasta Co. ....	.00	.00	.00	0.98	0.13	5.34	2.50	8.35	1.20
Red Bluff, Tehama Co. ....	.00	.00	.00	1.92	0.47	4.06	0.62	5.10	1.30
Reno, Washoe Co., Nevada	0.15	.00	.00	0.02	0.35	0.30	0.60	2.90	.00
Rocklin, Placer Co. ....	.00	.00	.00	1.04	0.97	2.43	0.75	6.77	1.80
Salinas, Monterey Co. ....	.00	.00	.00	0.59	0.80	0.85	0.78	4.62	0.63
San Ardo, Monterey Co. ....	.00	.00	.00	.00	0.35	0.17	0.58	5.58	0.17
Santa Cruz, Santa Cruz Co. ....	.00	.00	.00	0.79	1.10	2.20	1.01	9.62	0.53
San Fernando, Los Angeles Co.	0.19	T.	.00	0.78	0.87	0.24	0.21	8.54	0.27
San Geronimo, S. Buenav'tura Co. ....	.00	.00	.00	.00	0.58	0.08	0.06	5.07	0.08
San José, Santa Clara Co.	0.03	.00	.00	0.49	0.73	0.71	0.68	6.81	0.63

"T"—Trace of precipitation. Too small to be measured.

FALL—Continued.

April, 1887	May, 1887	June, 1887	July, 1887	Aug., 1887	Sept., 1887	Oct., 1887	Nov., 1887	Dec., 1887	Jan., 1888	Feb., 1888	March, 1888	April, 1888	May, 1888	June, 1888
1.18	0.01	.00	.00	.00	0.22	.00	0.85	2.16	3.17	1.36	2.31	0.02	0.37	0.09
1.74	.00	.00	.00	.00	0.45	.00	0.10	1.00	2.67	0.15	1.68	0.28	0.65	0.10
1.22	.00	.00	.00	.00	0.05	.00	0.10	1.76	1.72	0.53	1.36	0.25	0.69	0.10
0.14	.00	.00	.00	.00	.00	0.95	0.50	1.00	2.62	1.50	1.75	.00	.00	.00
1.16	.00	0.05	.00	.00	0.25	.00	1.35	1.81	3.95	1.09	3.29	0.23	0.81	.00
2.27	0.17	.00	.00	.00	.00	.00	1.35	4.18	4.87	—	4.18	0.65	0.88	.00
1.96	0.10	0.03	.00	.00	0.02	0.65	1.46	4.26	6.74	1.17	4.21	0.29	0.04	.00
1.27	0.07	.00	.00	.00	0.54	.00	0.93	—	—	—	2.83	0.23	0.60	—
6.49	2.65	1.96	.00	.00	0.46	0.44	3.40	7.47	11.36	2.57	2.77	1.37	—	—
0.65	0.46	0.46	0.23	.00	0.11	0.04	T.	2.08	1.51	0.22	0.54	0.18	1.05	0.08
5.65	4.64	1.20	.00	T.	0.08	1.08	5.79	16.66	22.40	3.52	5.86	—	1.04	—
2.53	0.06	0.04	T.	.00	0.39	.00	0.76	2.95	5.84	1.92	4.50	T.	0.42	0.50
2.17	0.06	.00	.00	.00	0.19	.00	0.54	3.06	3.57	1.56	3.18	0.04	0.43	—
2.31	0.08	0.07	.00	.00	0.28	0.41	0.45	2.46	5.33	0.22	6.32	0.11	0.02	.00
0.08	0.07	.00	.00	.00	0.32	.00	0.83	2.47	2.61	1.44	3.32	0.08	0.81	0.24
1.54	0.02	T.	T.	.00	0.16	0.32	1.72	4.04	6.09	0.30	5.87	0.08	0.09	.00
2.48	0.03	0.22	.00	T.	0.38	.00	0.59	4.82	5.83	0.84	3.08	0.12	0.35	0.27
4.36	T.	T.	T.	.00	T.	.00	0.12	7.85	10.83	0.70	5.00	—	3.35	0.65
2.63	0.94	0.36	0.37	0.17	0.35	0.09	1.75	3.88	6.18	1.77	2.43	0.05	1.80	4.21
6.54	0.64	0.52	.00	.00	0.26	.00	1.38	6.65	12.44	2.46	5.22	0.58	0.78	2.26
1.11	0.40	T.	.00	.00	0.21	0.21	0.94	4.42	5.61	0.16	4.81	.00	0.37	0.01
2.82	.00	.00	.00	T.	0.37	T.	0.20	2.15	2.84	0.06	2.63	0.02	0.52	T.
0.43	.00	T.	.00	.00	T.	.00	0.05	0.74	1.83	0.06	1.33	.00	0.19	T.
2.38	0.20	0.30	.00	.00	.00	0.70	4.00	3.19	4.80	2.00	3.25	0.38	—	—
1.88	0.18	.00	.00	.00	0.11	0.89	1.63	5.29	7.46	1.28	5.49	0.54	0.26	—
2.01	0.34	.00	.00	T.	0.62	.00	2.04	2.70	4.01	0.89	4.85	0.10	0.51	—
.00	T.	.00	.00	.00	0.25	.00	2.08	4.97	5.78	0.70	4.55	0.19	1.42	0.73
1.22	.00	.00	.00	.00	0.41	0.04	0.69	2.45	3.08	1.68	3.10	0.12	1.28	0.18
6.24	0.06	.00	.00	.00	0.49	T.	1.08	6.18	8.22	1.08	4.22	0.43	0.18	0.31
9.80	3.01	0.59	.00	.00	0.09	0.18	6.44	11.24	41.63	4.13	8.69	1.51	0.48	—
.00	.00	.00	.00	.00	0.33	.00	1.40	4.40	9.55	2.01	4.45	0.06	0.21	1.29
2.81	0.11	.00	.00	.00	0.26	.00	1.06	4.32	6.93	9.55	4.23	0.13	0.52	0.19
2.15	0.16	0.57	.00	T.	0.06	.00	0.50	2.01	4.13	1.06	2.42	0.16	0.38	0.35
1.07	0.22	T.	T.	.00	0.30	.00	1.09	2.69	4.62	0.43	1.90	0.12	0.14	T.
0.55	—	—	—	—	—	—	1.88	3.03	6.49	0.60	3.65	—	—	—
1.57	3.30	0.03	—	—	0.25	—	1.73	5.40	7.22	0.84	4.72	0.08	0.98	0.30
1.58	—	—	—	—	0.05	—	1.34	1.91	5.49	1.04	3.80	—	1.52	0.26
1.54	0.16	—	—	—	0.21	—	1.45	2.79	5.63	1.56	4.59	0.01	0.43	0.53
1.55	—	—	—	—	0.90	—	0.60	2.52	3.20	0.53	2.59	—	0.05	0.16
2.06	—	0.31	—	—	0.40	—	1.11	3.12	6.96	1.46	3.85	0.28	0.63	0.45
1.60	—	—	—	—	0.22	—	0.60	2.23	5.10	1.29	2.92	—	0.41	0.05
0.32	0.02	—	—	—	0.28	—	0.10	0.94	2.15	0.24	0.87	—	0.05	0.06
1.00	0.05	—	—	—	—	—	0.45	0.43	—	—	—	—	—	—
3.20	0.62	0.21	—	—	0.07	—	2.31	3.68	11.41	1.29	2.95	0.25	0.75	2.70
6.69	—	—	—	—	0.43	0.97	4.22	12.60	22.46	3.25	4.55	3.13	0.65	6.49
5.44	2.31	2.09	0.03	0.04	0.30	0.39	2.43	5.20	12.39	1.30	3.79	0.65	0.85	4.22
2.06	.00	0.15	.00	T.	.00	.00	1.14	2.64	4.11	1.56	2.73	0.57	0.24	0.53
1.88	0.08	0.25	0.43	0.43	0.55	1.15	.00	0.80	2.60	1.06	1.20	0.21	0.28	1.07
2.42	T.	.00	.00	.00	0.25	.00	0.81	3.52	6.17	1.38	4.63	—	0.25	0.24
1.37	0.02	0.15	1.10	.00	—	—	—	—	—	—	—	—	—	—
2.03	.00	.00	.00	.00	0.58	.00	0.87	3.44	4.59	0.91	4.27	0.47	0.58	T.
—	T.	0.10	.00	.00	0.50	.00	0.10	0.90	0.85	0.15	.00	0.19	0.32	0.62
.00	—	0.31	1.86	2.66	1.38	0.38	0.50	1.19	.00	—	1.42	0.02	0.25	—
1.10	0.44	.00	.00	.00	.00	0.21	0.60	2.61	5.60	0.30	4.50	0.20	0.28	.00
1.46	.00	.00	.00	.00	0.68	.00	1.79	3.30	3.72	3.10	4.85	0.36	1.00	0.30
1.52	.00	.00	.00	.00	0.29	.00	0.55	2.63	3.23	—	2.25	0.20	0.50	0.27
3.65	1.25	0.95	.00	.00	0.15	.00	1.60	4.10	9.35	2.70	2.79	.00	0.73	3.52
1.87	0.88	0.28	.00	.00	.00	.00	1.52	2.82	4.47	2.15	3.21	0.48	0.30	2.67
0.18	0.40	0.10	.00	.00	.00	.00	.00	1.60	1.35	.00	0.80	.00	0.38	.00
3.53	.00	.00	.00	.00	0.05	.00	1.05	3.38	4.39	0.76	2.05	.00	0.53	—
1.39	0.05	.00	.00	.00	0.68	.00	0.94	2.40	3.74	0.82	2.86	0.38	0.39	.00
0.76	0.05	0.26	.00	.00	0.14	0.37	0.32	2.07	3.44	0.28	2.91	0.11	0.27	.00
1.90	0.02	.00	.00	.00	0.42	0.42	1.21	4.58	8.00	1.93	4.61	0.57	1.08	0.09
2.52	T.	.00	.00	.00	—	0.22	0.90	1.41	—	—	3.40	0.44	.00	.00
2.94	0.14	.00	0.07	.00	.00	1.23	1.51	—	—	—	—	—	—	—
1.28	.00	.00	0.02	.00	0.61	0.03	0.70	2.53	3.06	1.09	3.00	0.31	0.60	0.22

SEASONAL RAIN

STATIONS.	July, 1886	Aug., 1886	Sept., 1886	Oct., 1886	Nov., 1886	Dec., 1886	Jan., 1887	Feb., 1887	March, 1887
San Mateo, San Mateo Co.....	0.07	.00	.00	1.69	0.77	0.95	1.21	9.16	0.72
San Miguel, San Luis Obispo Co..	.00	.00	.00	.00	0.24	0.21	0.52	5.96	0.12
Santa Monica, Los Angeles Co....	.00	.00	.00	.00	0.10	0.27	0.20	7.07	0.26
San Simon, Cochise Co., Arizona..	—	0.71	0.09	0.05	0.32	0.30	0.01	0.78	.00
Selma, Fresno Co.....	.00	.00	.00	0.27	0.59	0.60	0.31	2.84	.00
Soledad, Monterey Co.....	0.02	.00	.00	0.32	1.04	0.15	0.34	3.94	0.41
Southside, Los Angeles Co.....	0.17	.00	.00	.00	1.00	0.23	0.14	7.37	.00
Spadra, Los Angeles Co.....	T.	.00	.00	.00	1.05	0.40	0.20	7.36	.00
Stockton, San Joaquin Co.....	.00	.00	.00	0.28	0.75	0.69	0.36	3.30	0.23
Summer, Kern Co.....	.00	.00	.00	.00	0.60	0.45	0.20	2.23	.00
Summit, Placer Co.....	.00	.00	.00	3.10	1.70	5.75	6.25	20.70	1.40
Suisun, Solano Co.....	.00	.00	.00	0.49	0.22	1.80	0.82	6.37	0.85
Tacoma, Elko Co., Nev.....	0.50	0.40	0.10	0.18	0.22	0.32	1.00	0.88	0.40
Tehachapi, Kern Co.....	0.10	.00	.00	T.	1.15	0.60	0.50	8.88	0.24
Tehama, Tehama Co.....	.00	T.	.00	0.78	T.	2.00	0.33	4.29	1.10
Templeton, San Luis Obispo Co..	—	—	—	—	—	0.78	0.61	7.21	0.47
Toano, Elko Co., Nev.....	0.11	0.55	0.35	0.78	1.35	0.38	1.18	1.55	0.10
Towles, Placer Co.....	.00	.00	.00	0.80	0.80	3.00	4.35	11.60	1.10
Tracy, San Joaquin Co.....	.00	.00	.00	0.40	0.10	0.50	0.03	2.93	0.29
Truckee, Nevada Co.....	0.89	.00	T	0.85	1.10	2.29	3.43	12.25	0.36
Terrace, Box Elder Co., Utah.....	0.15	.00	0.55	0.05	0.25	0.15	0.32	0.22	0.20
Traver, Tulare Co.....	.00	.00	.00	0.10	0.67	0.95	0.45	3.05	0.32
Tucson, Pima Co., A. T.....	.00	4.94	0.44	0.42	0.45	.00	.00	0.84	.00
Vallejo, Solano Co.....	.00	.00	.00	0.47	0.83	1.77	1.15	7.72	0.46
Winnemucca, Humboldt Co., Nev..	0.61	.00	.00	1.72	0.73	0.89	0.62	1.71	0.40
Woodland, Yolo Co.....	.00	.00	.00	.00	.00	1.29	0.80	5.38	0.65
Yuma, Yuma Co., A. T.....	.00	.00	.00	.00	.00	.00	.00	.00	.00
Tuohys, Tulare Co.....	T.	.00	.00	0.22	0.85	1.08	0.63	6.61	0.33
Sacramento, Sacramento Co.....	.00	.00	.00	0.56	0.11	1.82	0.75	4.94	0.89
Williams, Colusa Co.....	.00	.00	.00	0.60	.00	0.95	0.35	4.35	1.30
Willows, Colusa Co.....	.00	.00	.00	.00	T.	1.19	0.17	2.77	1.16
Willcox, Grant Co., A. T.....	0.32	2.39	1.40	0.22	0.21	0.01	—	1.44	.00
Wells, Elko Co., Nev.....	0.40	0.20	.00	0.50	0.50	3.25	0.80	1.35	.00
Wadsworth, Washoe Co., Nev.....	.00	.00	.00	2.35	0.18	T.	0.28	2.52	.00
Turlock, Stanislaus Co.....	.00	.00	.00	0.29	0.50	0.55	0.16	2.30	0.36
Tulare, Tulare Co.....	.00	.00	.00	.00	0.55	0.55	0.45	1.98	0.11
Los Angeles, Los Angeles Co.....	.00	.00	.00	.00	1.18	0.26	0.20	8.92	0.22
San Diego, San Diego Co.....	T.	T.	.00	0.05	0.95	0.06	0.04	4.51	0.02
Los Angeles, Los Angeles Co.....	0.27	0.21	0.11	0.02	1.18	0.26	0.20	9.25	0.29
Fresno, Tulare Co.....	.00	.00	.00	0.57	0.80	0.44	0.40	2.79	0.17
Keeler, Inyo Co.....	0.14	0.08	.00	0.01	0.08	.00	T.	0.93	.00
Yuma, A. T.....	T.	2.23	.00	1.11	0.23	.00	.00	T.	.00
Red Bluff, Tehama Co.....	T.	T.	.00	1.76	0.34	3.92	0.59	5.21	1.13
Fort Bidwell.....	0.41	0.04	.00	1.36	1.06	4.25	3.31	4.85	0.97
Eureka, Humboldt Co.....	—	—	1.00	2.00	6.00	9.00	8.86	9.07	2.28
Roseburg, Or.....	2.20	T.	0.33	3.43	2.63	7.30	8.64	6.24	2.38
Portland, Or.....	0.32	0.03	1.19	2.87	1.00	11.52	12.31	2.81	8.00
Olympia, W. T.....	1.15	0.42	3.17	4.15	1.73	13.38	9.83	4.28	10.60
Tatoosh Island.....	6.52	4.70	5.54	7.81	10.44	25.84	14.46	11.30	16.36
Sacramento, Sacramento Co.....	.00	.00	.00	0.68	0.21	1.12	6.28	0.94	2.53
San Francisco, San Francisco Co..	0.23	.00	0.01	1.48	0.84	2.07	1.90	9.24	0.84

"T"—Trace of precipitation. Amount too small to be measured.

FALL.—Continued.

April, 1887	May, 1887	June, 1887	July, 1887	August, 1887	Sept., 1887	Oct., 1887	Nov., 1887	Dec., 1887	Jan., 1888	Feb., 1888	March, 1888	April, 1888	May, 1888	June, 1888
1.68	.00	.00	.00	.00	0.47	.00	1.08	3.44	4.73	1.21	3.97	0.13	0.67	0.08
1.40	0.24	0.26	.00	.00	0.58	0.37	0.49	2.81	4.06	0.13	2.34	.00	0.22	.00
2.47	1.40	.00	.00	.00	0.30	.00	1.13	2.93	6.98	.00	6.95	.00	.00	.00
0.10	.00	.00	.00	.00	0.10	.00	.00	.00	.00	.00	—	—	—	.00
2.60	0.58	.00	.00	.00	—	0.20	0.16	0.97	2.40	T.	2.57	0.10	0.31	.00
0.54	.00	.00	.00	.00	0.16	.00	0.51	1.47	2.86	0.55	2.10	0.15	0.35	.00
2.55	—	.00	.00	.00	0.60	1.40	0.50	1.82	2.57	0.82	3.19	.00	6.15	.00
2.17	.00	.00	.00	.00	T.	.00	0.68	2.25	6.23	0.98	3.45	.00	—	—
1.37	.00	.00	.00	.00	0.28	.00	0.43	2.69	3.00	0.58	1.74	0.55	0.54	.00
2.04	.00	T.	.00	.00	0.55	0.10	—	0.69	1.64	1.60	0.31	0.12	0.42	.00
5.80	0.95	1.60	0.10	T.	T.	0.07	1.50	11.60	9.20	—	8.05	2.30	1.44	3.72
1.74	.00	.00	.00	.00	.00	.00	0.96	2.79	4.30	1.58	3.97	.00	0.65	0.30
0.40	.00	0.10	0.65	0.15	0.40	.00	0.02	0.50	1.18	0.40	0.40	0.20	0.15	0.25
1.95	0.26	.00	.00	.00	.00	0.86	0.26	1.44	2.57	2.60	2.57	1.25	0.25	—
1.56	0.45	.00	.00	.00	.00	.00	1.56	2.62	4.70	2.40	4.10	0.25	0.25	0.30
1.51	0.06	0.35	.00	.00	0.56	0.24	0.79	3.18	6.05	0.32	5.00	0.38	0.34	0.04
1.12	0.15	0.30	0.86	.00	.00	0.04	0.45	0.82	1.95	0.40	0.95	0.75	0.84	0.19
1.20	T.	.00	T.	.00	.00	.00	0.90	—	—	—	2.80	—	—	—
3.02	.00	.00	.00	.00	T.	.00	0.05	2.43	1.99	0.84	0.61	.00	0.54	0.19
2.00	2.04	0.37	0.41	T.	.00	.00	0.30	4.80	2.35	.00	3.15	0.30	0.70	0.80
0.15	0.09	.00	.00	.00	.00	.00	0.30	0.10	—	—	—	0.01	.00	0.05
2.27	0.70	0.14	.00	.00	0.26	—	—	0.97	—	—	—	T.	0.11	.00
0.04	0.27	0.07	4.22	.00	1.99	0.43	0.23	0.07	0.12	0.15	0.68	—	0.23	0.50
1.90	.00	.00	.00	.00	0.39	.00	0.48	3.06	4.52	—	0.62	.00	0.45	0.16
1.62	0.44	1.06	0.09	0.13	0.32	.00	.00	1.55	1.37	0.63	0.15	0.20	0.50	0.26
1.53	.00	.00	.00	.00	.00	.00	0.40	3.30	4.25	1.27	2.38	0.10	1.10	.00
.00	.00	0.11	.00	.00	—	T.	1.92	0.15	0.30	.00	.00	.00	.00	.00
3.15	2.50	.00	T.	.00	T.	—	—	—	—	—	—	—	—	—
1.60	T.	.00	.00	.00	0.01	.00	0.33	2.11	4.42	0.57	2.46	0.13	1.27	0.03
1.26	.00	1.18	.00	.00	.00	.00	0.68	1.31	2.22	0.70	1.72	.00	0.67	0.08
2.78	.00	.00	.00	.00	.00	.00	0.95	2.17	2.99	1.38	1.82	0.08	0.24	0.29
0.08	0.40	0.54	3.51	5.15	2.68	0.45	0.31	0.78	0.75	—	1.03	T.	0.07	.00
.00	0.05	.00	.00	.00	0.20	.00	0.30	0.70	1.75	0.10	1.35	.00	—	—
0.18	0.69	0.52	1.28	0.10	0.15	.00	.00	0.98	0.90	.00	.00	0.10	0.52	.00
1.08	.00	T.	.00	.00	1.00	.00	0.03	1.28	2.19	0.19	1.11	0.18	0.52	.00
1.52	0.90	.00	.00	.00	0.01	0.18	0.05	0.70	2.89	0.19	1.14	.00	1.11	.00
2.02	0.08	0.04	0.03	.00	0.15	0.14	0.85	4.35	7.59	1.17	4.63	.00	.00	.00
2.14	0.47	0.04	0.01	T.	T.	T.	2.08	1.14	2.00	1.50	2.79	0.10	0.22	0.04
2.36	0.20	0.07	0.07	T.	0.18	0.17	0.80	2.68	6.04	0.80	3.17	0.12	0.05	0.01
2.93	0.03	0.07	.00	.00	0.49	0.15	0.32	1.16	1.75	0.19	1.90	2.01	0.56	T.
1.14	0.04	T.	0.52	.00	1.08	0.84	0.01	0.48	0.70	1.21	0.30	0.83	0.30	0.20
0.20	T.	0.01	T.	T.	1.09	0.02	2.43	0.15	0.18	0.05	0.05	T.	.00	.00
1.76	0.77	0.26	T.	T.	0.06	.00	1.52	2.32	4.08	5.33	3.47	0.53	0.51	2.61
1.96	1.47	0.73	0.18	0.21	0.05	.00	0.38	2.40	3.28	1.81	3.28	0.16	1.50	2.38
5.55	3.51	1.92	0.06	0.07	0.21	—	—	—	12.92	1.98	4.09	1.05	0.76	4.66
3.79	1.53	0.89	0.07	0.08	0.51	1.13	3.19	8.89	6.62	2.81	2.39	0.63	1.15	5.94
5.10	4.77	1.44	0.03	0.58	3.06	1.34	3.43	11.34	8.50	2.42	2.87	2.06	0.86	5.38
3.94	5.66	1.01	0.74	0.18	3.34	1.51	4.94	15.75	11.38	2.70	5.96	1.72	0.21	4.80
8.51	8.85	1.12	1.24	1.39	3.43	11.83	10.15	17.47	12.10	11.08	8.65	5.92	2.00	7.44
.00	.00	.00	T.	0.02	.00	0.45	2.09	4.81	4.81	0.57	3.04	0.10	0.40	0.08
2.30	0.06	0.07	T.	0.01	0.29	T.	0.99	3.34	6.61	0.94	3.60	0.11	0.38	0.27

ANNUAL METEOROLOGICAL REVIEW.

Showing the Climatic Condition in all its features for Seventeen Years, from 1871 to 1887, both years inclusive, at San Francisco, California; compiled by Sergeant Nelson Gorham, Observer in charge of the local Signal Station.

ANNUAL WEATHER REVIEW FOR YEAR:	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	30.022	30.039	30.029	30.020	30.026	30.007	29.994	29.976	30.033	30.047	30.044	30.030	30.054	30.001	30.028	30.041	30.038
Highest barometer	30.42	30.48	30.49	30.41	30.41	30.42	30.42	30.43	30.50	30.49	30.41	30.49	30.67	30.51	30.45	30.40	30.536
Lowest barometer	29.53	29.43	29.54	29.55	29.65	29.36	29.66	29.43	29.29	29.48	29.67	29.71	29.63	29.43	29.42	29.32	29.33
Range of barometer	0.89	1.05	0.95	0.86	0.76	1.06	0.76	1.00	1.20	1.01	0.74	0.75	0.94	1.11	1.03	1.08	1.03
Average temperature	56.3	56.2	55.9	55.7	55.7	56.3	57.3	56.6	56.1	54.2	55.8	54.4	54.7	55.7	56.9	56.1	55.2
Highest temperature	81.0	92.0	79.0	89.0	82.0	93.0	92.0	78.0	89.0	83.5	83.0	83.0	95.2	83.0	87.0	93.9	90.9
Lowest temperature	42.0	41.0	40.0	39.0	39.0	36.0	42.0	39.0	34.0	37.0	40.0	34.5	35.0	35.0	43.0	41.0	33.1
Range of temperature	51.0	51.0	39.0	50.0	43.0	57.0	50.0	39.0	55.0	46.5	43.0	48.5	60.2	48.0	44.0	52.9	63.8
Greatest range of temper- ature	33.0	40.0	32.0	39.0	41.0	41.0	41.0	39.0	36.0	38.5	36.0	33.0	44.2	36.0	35.0	43.8	51.3
Least range of temper- ature	16.0	16.0	15.0	19.0	19.0	20.0	18.0	20.0	20.0	19.0	18.0	19.0	20.0	15.5	17.5	22.7	20.9
Average maximum tem- perature	73.3	72.6	70.4	72.0	71.5	74.2	74.8	71.0	75.5	71.8	72.0	70.0	75.4	71.5	73.7	77.9	78.8
Average minimum tem- perature	47.6	47.6	47.6	46.1	46.2	46.2	48.0	47.2	46.0	44.6	46.6	44.7	45.3	47.2	49.2	45.5	44.7
Average range of temper- ature	25.7	25.0	22.8	25.9	25.2	28.0	26.8	23.8	29.5	27.2	25.4	25.2	30.1	24.3	24.5	32.4	34.1
Average humidity	75.4	76.1	72.5	72.3	75.6	72.0	72.2	73.9	73.9	75.6	75.8	75.0	78.1	79.5	81.0	75.1	75.4
Average dew point.													47.5	49.1	50.7	47.5	46.8
Prevailing direction of wind	S.W.	S.W.	S.W.	S.W.	S.W.	W.	W.	S.W.	W.	W.	W.	W.	W.	W.	W.	W.	W.
Total precipitation	47	36	48	32	48	44	38	40	40	44	36	36	36	45	36	42	36
Total movement of wind	81.468	81.408	84.201	83.709	85.995	81.618	80.949	79.387	78.575	82.724	83.105	85.554	81.480	78.357	79.191	78.257	80.457
Maximum velocity of wind																	
Direction at time of max- imum velocity	N.W.	W.	S.W.	S.	N.	S.E.	N.	N.	N.E.	N.	W.	N.W.	W.	N.	W.	S.E.	W.
Total number of clear days	122	135	134	141	141	179	174	146	159	153	130	156	132	124	116	165	152
Total number of fair days	138	133	149	160	150	125	132	142	146	110	126	144	152	148	157	134	140
Total number of cloudy days	106	97	82	64	62	62	59	77	60	103	89	65	77	93	92	65	73
Total number of days of precipitation	69	64	71	58	59	59	46	75	85	70	65	73	51	83	70	61	60

[illegible]

DAILY NORMAL TEMPERATURE AT SAN FRANCISCO.

The following table of normal temperatures for each day of each month, at San Francisco, as deduced from three daily observations for fifteen years, was furnished by Sergeant Nelson Gorom, the Observer in charge of the San Francisco local Signal Office:

DATE.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	50.3	52.2	54.4	55.1	56.4	57.9	58.5	59.1	59.8	59.4	57.3	54.7
2	50.7	52.7	54.6	54.7	56.8	57.7	58.4	59.2	60.6	59.2	56.0	53.1
3	50.0	52.4	54.0	54.4	55.6	58.0	58.3	58.3	60.0	60.2	55.9	52.7
4	50.3	52.3	52.7	54.6	55.6	58.9	58.9	58.6	59.9	58.9	57.1	53.6
5	52.3	51.0	54.0	53.5	55.5	60.2	58.4	58.8	59.0	59.0	57.0	54.0
6	51.0	50.6	53.4	53.1	56.0	60.0	58.0	58.9	58.3	59.9	57.7	53.2
7	51.7	50.6	52.9	53.9	57.1	58.7	58.4	58.3	58.6	61.1	58.3	52.6
8	51.3	51.4	52.7	54.9	56.2	58.9	59.0	58.4	58.7	60.5	57.8	51.4
9	50.5	51.5	52.9	54.6	55.3	58.9	58.9	58.6	58.9	59.2	57.7	50.8
10	50.3	51.1	53.1	53.9	55.4	59.1	58.8	58.7	59.8	59.9	56.1	50.9
11	49.3	50.7	53.7	54.0	55.4	60.0	58.9	57.9	60.3	60.0	56.1	50.5
12	48.5	51.0	53.6	53.8	54.7	60.0	59.4	57.8	60.4	58.9	55.4	50.3
13	49.2	51.6	52.5	53.1	54.7	58.7	58.9	58.1	60.7	57.3	55.4	51.0
14	50.7	51.1	52.7	54.3	54.8	57.4	58.7	58.5	61.0	57.9	56.3	51.7
15	50.2	51.8	52.9	54.7	55.1	57.7	58.8	58.2	60.0	58.9	55.9	51.6
16	51.0	52.0	52.6	53.8	55.7	57.8	58.7	57.6	59.9	59.5	56.0	51.0
17	50.4	51.7	52.8	53.9	55.6	57.9	58.2	58.2	59.6	61.4	55.5	50.2
18	50.3	50.9	54.5	53.6	56.5	58.6	57.6	58.5	58.9	61.3	54.8	51.2
19	51.2	51.6	54.2	54.0	56.7	59.2	57.6	57.8	59.7	59.9	54.1	52.3
20	49.9	53.0	54.1	53.9	56.1	59.6	57.8	57.3	60.8	58.9	55.1	52.3
21	50.0	53.6	53.9	55.2	56.4	57.7	57.6	57.9	61.7	59.4	55.7	51.9
22	51.3	53.8	54.6	55.8	56.3	58.2	57.7	58.1	60.3	59.2	56.1	51.9
23	51.1	53.8	54.0	56.5	57.3	58.1	57.7	58.2	59.8	58.8	55.7	52.4
24	50.8	52.4	54.6	56.1	58.0	56.9	57.9	59.2	59.6	58.2	55.0	53.3
25	50.9	52.7	54.5	54.4	58.7	57.2	57.9	58.8	61.2	58.5	53.5	52.7
26	50.3	53.3	55.5	54.4	58.0	58.6	58.8	59.2	58.8	59.7	53.4	51.5
27	50.5	52.9	55.6	54.9	57.9	57.0	58.7	59.6	59.0	58.8	54.2	51.5
28	50.6	52.6	54.5	55.8	57.1	57.6	58.6	59.1	60.0	58.0	54.4	51.5
29	51.5	51.5	54.7	55.2	57.4	58.2	58.8	59.6	59.9	57.7	55.6	50.1
30	51.4	-----	53.9	55.7	58.5	58.1	58.6	60.5	58.9	57.2	55.0	49.9
31	51.5	-----	54.6	-----	58.7	-----	59.5	59.3	-----	57.6	-----	49.7
Monthly	50.6	52.0	53.8	54.5	56.4	58.4	58.5	58.6	59.8	59.2	55.8	51.8

RED BLUFF WEATHER FROM 1877 TO 1887.

From the Signal Office records, and taken from the annual meteorological review of the State of California, by Sergeant James A. Barwick, Observer:

ANNUAL WEATHER REVIEW FOR:	1877.*	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.58	29.64	29.65	29.65	29.64	29.67	29.62	29.65	29.65	29.64	
Highest barometer	30.03	30.14	30.30	30.14	30.12	30.14	30.34	30.22	30.00	30.10	30.14
Lowest barometer	29.23	29.00	28.97	29.03	29.19	29.30	29.21	28.98	29.07	28.99	29.08
Range of barometer	1.14	1.32	1.11	.93	.85	1.13	1.24	1.02	1.11	1.06	
Average temperature	64.0	63.3	61.2	62.1	60.2	61.5	60.8	64.4	63.2	64.4	
Highest temperature	108.0	110.5	110.0	108.0	103.0	105.0	107.0	108.0	109.0	111.5	
Lowest temperature	32.0	25.0	25.0	26.0	31.0	25.0	19.0	22.0	33.0	30.0	27.3
Range of temperature	85.5	85.0	82.0	72.0	80.0	88.0	85.0	75.0	79.0	84.2	
Greatest monthly range of temperature	54.0	55.0	54.0	53.5	53.0	57.0	58.0	57.0	56.0	54.4	70.4
Least monthly range of temperature	34.0	25.0	36.0	27.5	32.5	30.0	39.0	35.5	32.5	34.5	35.9
Average maximum temperature	86.9	89.2	86.7	86.0	83.7	87.2	72.0	75.3	76.2	75.6	
Average minimum temperature	41.4	41.3	39.8	41.1	39.5	39.8	49.7	52.8	52.4	51.4	
Average range of temperature	45.5	47.8	47.0	45.1	43.9	47.3	44.0	44.8	46.6	50.0	
Average humidity	53.2	52.5	51.4	55.1	58.0	55.1	59.3	57.5	55.3	47.0	
Average dew point						41.5	43.5	45.2	42.8	39.5	
Prevailing direction of wind	N.	N.	N.	N.	N.	N.	N.	S.	N.	N.	
Total precipitation	8.54	49.01	33.64	26.53	24.93	21.82	13.76	28.06	29.63	17.21	13.60
Total velocity of wind	28,805	70,220	a	b20,379	49,088	45,879	54,948	58,145	51,924	54,690	63,705
Maximum velocity of wind	30	46	52	60	42	40	36	48	44	50	45
Direction at time of maximum velocity	N.	S.E.	S.	S.E.	S.	S.	S.	S.	S.	S.E.	N.
Total number of clear days	128	232	207	230	204	215	261	225	223	212	213
Total number of fair days	32	72	90	74	103	89	67	84	96	91	98
Total number of cloudy days	24	61	68	55	58	43	37	53	46	59	54
Total number of foggy days	a	a	a	a	0	0	5	0	2	2	0
Total number of days of precipitation	27	79	83	66	72	69	44	71	70	63	57
Number of earthquakes	0	2	0	0	2	0	0	1	0	0	2
Snow storms	a	a	a	a	a	0	0	1	0	1	2
Thunder and lightning	a	a	a	a	a	7	7	7	7	3	5
Number of solar halos	a	a	a	a	4	9	0	0	0	0	2
Number of lunar halos	a	a	a	a	3	2	3	5	2	14	14
Number of light frosts	a	a	a	a	17	19	9	21	16	14	10
Number of killing frosts	a	a	a	a	4	10	37	15	3	6	18
Number of days maximum temperature above 90°	69	93	84	71	59	60	94	53	77	89	99
Number of days minimum temperature below 32°	0	12	16	26	1	17	33	15	0	7	12
Highest water in the river during each year					c28.6	c12.0	c13.0	c21.0	d21.1	d20.5	d18.3
Lowest water in the river during each year					c1.1	c0.10	c0.6	c0.10	d0.3	d0.3	d0.4
Range of water in the river					c27.5	c11.2	c12.6	c20.2	d20.8	d20.2	d17.9

*Station opened July 1, 1877—Six months, 1877. a No record. b Five months. c Feet and inches. d Feet and tenths.

RAINFALL AT RED BLUFF.

This table is made up from the Signal Service records, and shows the total rainfall for each calendar year from 1878 to date, and the rainfall by seasons from 1877-78 to date; also the totals for each month, with the averages from the opening of the Signal Office on July 1, 1877, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1877							.05	.03	none	1.35	3.13	3.98			
1878	20.71	16.66	4.16	2.21	.89	none	none	none	.42	1.56	1.66	.69	48.96	1877-78	53.17
1879	3.18	3.67	5.39	2.12	2.18	.30	.04	.28	sprin.	.48	6.05	9.95	33.64	1878-79	21.17
1880	2.01	1.66	1.70	7.05	1.04	none	none	none	none	.08	.14	12.85	26.53	1879-80	30.26
1881	9.40	2.79	.51	1.83	.79	.51	sprin.	none	1.07	1.61	.73	5.69	24.93	1880-81	28.90
1882	2.81	3.94	2.67	2.12	.33	.15	none	none	.49	2.80	5.07	1.44	21.82	1881-82	21.12
1883	.87	.39	2.60	1.96	2.96	none	none	none	1.04	2.68	.74	.52	13.76	1882-83	18.58
1884	3.55	2.21	7.81	4.31	.18	.97	none	none	.36	.90	.04	7.73	28.06	1883-84	24.01
1885	1.84	1.19	sprin.	.62	.64	1.37	.05	none	2.91	.10	17.05	3.90	29.67	1884-85	14.69
1886	4.80	.18	1.31	4.12	.73	sprin.	sprin.	sprin.	none	1.76	.34	3.94	17.18	1885-86	65.15
1887	.57	5.21	1.13	1.76	.77	.26	sprin.	sprin.	.06	none	1.52	2.32	13.60	1886-87	15.74
Totals	49.74	37.90	27.28	28.10	10.51	3.56	.14	.31	6.35	13.32	36.47	53.01	238.15		252.79
Av'g's	4.974	3.790	2.728	2.810	1.051	.356	.013	.028	.577	1.211	3.315	4.819	33.815		25.279

The following table gives the average highest and lowest temperature, and the total rainfall for each year from 1878 to 1888, also the highest and lowest temperature from the railroad records from 1875 to 1877, both years included:

YEARS.	Highest Temperature.	Lowest Temperature.	Clear Days.	Fair Days.	Cloudy Days.	Days of Inch or More of Precipitation.	Total Yearly Precipitation, Inches.
*1875	104	33					26.10
*1876	106	35					18.75
*1877	112	40					10.12
†1878	103	30	141	160	65	54	20.86
†1879	104	30	173	146	36	48	17.41
†1880	97	30	141	171	54	51	18.65
†1881	102	34	172	154	39	24	5.53
†1882	100	32	197	109	41	39	10.74
†1883	104	28	183	143	29	33	14.14
†1884	102	34	189	110	67	71	40.39
†1885	108	36	181	145	38	26	10.09
†1886	98	32	190	131	43	32	17.20
†1887	100	33	193	129	39	36	16.19

* Railroad record. † Signal Service record.

CLIMATE OF CALIFORNIA BRIEFLY DESCRIBED.

There are essentially two climates in California. The land climate and the sea climate. The latter derives its low temperature from the ocean, the water of which, along the coast, stands at from 52 to 54 degrees all the year round. The evenness of the ocean temperature is owing to a steady current from the north, which is accompanied also by winds in the same direction during the entire summer season, or rather from April to October, inclusive.

Almost daily, during this period, a deluge of cold, damp air, of the same temperature as the ocean over which it has passed, is poured upon the land. It is mostly laden with mists in dense clouds, which it deposits at the foot-hills and on the slopes of the highlands, or carries a short distance into the interior, wherever there is a break in the land wall.

The land climate is as nearly as possible the opposite in every respect. In summer and autumn it is hot and dry. It undergoes various modifications from the configuration of the surface of the earth. Even the mountains, which retain the snow to a late period, present a high temperature in the middle of the day, and the presence of snow on their summits in June is owing to the great mass which has accumulated on them, rather than to cold weather. A large district of territory lies between the jurisdiction of the two climates and subject to their joint influence. It is composed chiefly of valleys surrounding the bay of San Francisco and penetrating into the interior in every direction. There is no climate in the world more delightful than these valleys enjoy, and no territory more productive. Whilst the ocean prevents the contiguous land from being scorched in summer, it also prevents it being frozen in winter. Hence ice and snow are not common in the ocean climate.

The difference in temperature is comparatively slight between summer and winter. The absence of warm weather in the summer months is characteristic of the coast climate, and strikes a stranger forcibly. The most ordinary programme of this climate for the year is as follows, beginning with the rainy season: The first decided rains are in November or December, when the country, after having been parched with drought, puts on the garb of spring. In January the rains abate, and vegetation advances slowly, with occasional slight frosts. February is spring-like, with but little rain. March and April are pleasant and showery, with an occasional hot day. In May the sea breeze begins, but does not give much annoyance. In June, just as warm weather is about to set in, the sea breeze comes daily, and keeps down the temperature—it continues through July and August, occasionally holding up for a day or two, permitting the sun to heat the air to a sweating point. In September the sea wind moderates, and there is a slight taste of summer, which is prolonged into the next month. The pleasant weather often lingers in the lap of winter, and is interrupted only by the rains of November or December.

Though the nights in the interior are not so uniformly cool, yet there are few localities, even in the valleys, where they are too warm for sleeping, even though the day temperature may have reached 100 degrees. This is a remarkable feature of the climate of the Pacific States, and it has an important bearing on the health, vigor, and character of the population. In speaking of the "rainy season," strangers will not infer that the rain is perpetual, or nearly so, during that time. The term is employed only in contrast with the dry season, and it implies the possibility rather than the actual occurrence of rain. In more than half the winters there is not a drop beyond the necessities of agriculture, and even in the seasons of most rain much pleasant weather is interspersed. If the winter be not extraordinary, it is generally regarded as the most pleasant season of the year. In the intervals of rain, it is bright, sunny, and calm. It is spring rather than winter. The grass starts as soon as the soil is wet. At Christmas, nature wears her green uniform almost throughout the entire State, and in February and March it is set with floral jewels. The blossoms increase in variety and profusion until April, when they are so abundant in many places as to show distinctly the yellow carpeting on hills five miles distant.

In the Atlantic States the storms of approaching winter put a stop to

the labors of the farm, and force both man and beast into winter quarters. In California it is just the reverse. The husbandman watches the skies with impatient hope, and as soon as the rains of November and December have softened the soil, every plow is put in requisition. Nothing short of excess or deficiency of rain interferes with winter farming. The planting season continues late, extending from November to April, giving an average of nearly six months for plowing and sowing, during which the weather is not likely to interfere with outdoor work more than in the six spring and summer months of the Eastern States. Owing to the absence of rain, harvesting is conducted, which would confuse the ideas of an Atlantic farmer. There are no showers or thunder gusts to throw down the grain, or wet the hay, or impede the reaper. The hay dries in the swath without turning. The grain remains standing in the field awaiting the reaping machine, it may be, for a month after it is ready to cut—and so it remains when cut, awaiting the thrasher. When thrashed and sacked, the sacks are sometimes piled up in the field a long time before removal. In September or October the great grain-growing valleys may often be seen dotted over with cords of grain in sacks, as secure from danger from the weather as if securely housed. Owing to the absence of severe frosts, the gardens around San Francisco supply fresh vegetables all through the winter. New potatoes often make their appearance in March. In May the potatoes are full grown, and the largest weigh a pound or more. Many of the interior valleys are subject to malarious fevers, but not generally of a severe type. The various forms of disease which prevail elsewhere are found here, but they present no peculiarities worthy of comment. Insanity and diseases of the heart and blood vessels are frequent, but this is due rather to moral and physical causes than to climatic influence. The relation of the climate to pulmonary affections presents its most important aspect. Many persons threatened with lung disease, or but slightly affected by it, have regained their health completely by immigration to this State.

THE SACRAMENTO VALLEY.

It would be impossible in this brief space to give an exhaustive description of our great valley, or even to fully outline the characteristics which long since placed this part of California on a footing with the most favorable localities of the continent. Aside from its geographical peculiarities, which are fast giving us an enviable reputation at home and abroad, this section is rich in historical reminiscences.

These date from the earliest pioneer times—the days of the unfortunate Donner party, and of the generous Captain John A. Sutter—the days when placer mining was the chief industry, and the whims of the people the law, to the present, when we find in the “great valley” the industries of refined culture, and a development resting upon sobriety, energy, and intelligence. In fact, the history of Northern California is pregnant with all the variety of items which go to show the steady advancement necessary to a sure, sturdy, and independent growth of one of the most interesting sections of our great commonwealth. But these must be passed, at least for the present.

The valley proper is one of the largest of its class in the world, and extends from Shasta County on the north to San Joaquin on the south, and is limited on the east and west only by the lofty mountain ranges, whose snow-capped peaks point skyward; fit emblems of their supremacy. To the northward, and plainly visible for one hundred miles, Mount Shasta

risers heavenward nearly fifteen thousand feet, and is second in altitude in the United States.

The Sacramento River, the largest stream in the State, traverses the valley from north to south, and is the natural line of commerce. Tributaries from the Sierra Nevada and Coast Range flow into the Sacramento on either side, and are, in some instances, themselves navigable. The Sacramento rises in the extreme north, and flows southward to Suisun Bay, from which, by San Pablo and San Francisco Bays, it has communication with the Pacific Ocean. A feature particularly noticeable from the geographer's standpoint, and not without interest to the intelligent homeseeker, is the fact that the streams of the valley, after reaching the plains, follow the higher sections, thereby furnishing unequaled facilities for irrigation. The artificial watering of crops has not heretofore been considered necessary, but is deemed of value in a few special instances.

The valley for a quarter of a century has been devoted to agriculture, and until recently almost exclusively to grain raising. From the first it was found that wheat growing was remunerative employment, and with that, content with good enough, which was so common a characteristic of the pioneer immigrant, no loftier ambition was stimulated. And, notwithstanding the discouraging depression of the grain markets in previous years, there never has been a time when the thrifty farmer could not meet his liabilities, and point to a little surplus he could call his own. Of late years, however, considerable attention has been devoted to fruit raising, and now large shipments are daily made, through the fruit season, to San Francisco and eastern markets. The fruit produced is of excellent quality, both as regards appearance and flavor, which fact is abundantly attested by the awards in its favor lately made, when brought into competition with similar products from other sections. As immigrants from the East and Europe arrive, a large proportion at once enter into horticultural pursuits, and are amply rewarded. Lately much attention has been devoted to the citrus fruits, and already our oranges and lemons rank favorably with the products of the older countries.

Although the Sacramento Valley has long been settled, and for the most part made subject to continual tillage, there is yet room for development; and as fruit interests gain in strength, and small farming is consequently encouraged, there will be room for thousands where now are hundreds, and the wealth of the country will be correspondingly increased. In this connection it may be interesting to know what lands are subject to cultivation. A good authority gives the following estimate: Plain land, 4,000,000 acres; foothills proper, 4,500,000 acres; upper foothills, 4,000,000 acres; mountains, between 1,000 and 2,000 feet elevation, 6,000,000 acres, making the total acreage of the land described 18,500,000 acres.

A few of the cities and larger towns may be mentioned briefly. On the direct route of commercial traffic is Sacramento, a large and flourishing city, the capital of the State, and the seat of numerous institutions of the arts, sciences, and learning; Marysville, the center of vast agricultural districts, which has direct commercial connection with the outside world by water and by rail, as well as the home of several noted factories and institutions of learning; Chico, now one of the most prosperous little cities in the State, and the location of the new Normal School; Oroville, with its colonies and orange groves, and others of which we cannot even speak.

The best evidences, however, of the possibility of the Sacramento Valley, are shown by the interest manifested by those who visit us, and have already cast their lot with ours.

Foreign Temperature, by Sir James Clark, with Palermo, Algiers, and Mentone added to the table by Dr. Henry Bennett, from whose work, "Winter and Spring on the Shores of the Mediterranean," the following table was taken:

NAME OF PLACE.	MEAN TEMPERATURE OF MONTHS.												Mean Annual Temperature.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
Cairo	58.1	56.1	64.6	77.9	78.3	83.7	85.8	85.8	79.2	72.3	63.0	61.3	71.5
Santa Cruz (Canaries)	62.8	64.3	67.2	67.3	72.1	73.9	77.3	78.9	77.4	74.7	70.4	65.8	71.2
Cevlon (Hill District)	63.2	64.5	70.8	72.7	71.4	69.4	69.8	68.9	70.8	70.9	70.6	69.7	71.3
Malta	56.3	58.1	61.8	67.4	67.4	73.8	79.6	81.2	77.8	71.1	64.2	59.6	71.0
Corfu	52.6	51.8	54.6	58.3	64.7	72.3	77.7	81.3	78.3	70.8	63.8	58.4	65.6
Madeira	59.7	60.3	61.9	62.0	63.4	66.9	70.0	71.9	71.3	66.8	64.0	61.4	65.0
Palermo													63.4
Algiers													71.7
Port Jackson (N. S. W.)	61.7	71.6	69.6	64.0	59.7	54.9	53.9	55.3	50.3	63.5	67.7	69.2	64.0
Caliz	51.4	53.7	55.2	59.6	63.8	68.2	70.3	72.9	70.2	67.1	58.8	53.6	65.4
St. Michael's (Azores)	59.0	59.0	59.5	61.0	63.0	67.0	68.0	70.0	68.0	63.0	56.0	55.6	62.4
Naples	46.5	48.5	52.0	57.0	63.5	71.0	75.0	76.5	72.5	65.0	54.5	50.5	62.3
Mentone	48.2	48.5	52.0	57.2	63.0	70.0	75.0	75.0	69.0	64.0	54.0	49.0	61.4
*San Remo	47.2	50.2	52.0	57.0	62.9	69.2	74.3	73.8	70.6	61.8	53.3	49.3	60.2
Rome	47.6	49.4	52.0	56.4	64.5	69.2	73.3	74.0	69.5	63.6	58.8	49.6	60.7
Pisa	44.0	48.1	51.5	56.3	63.8	70.6	77.5	77.5	73.5	62.6	52.3	47.0	60.6
Genoa	41.6	47.5	51.1	60.3	64.4	73.5	75.1	76.5	73.2	64.7	51.0	45.6	60.4
Toulon	40.0	44.0	48.0	55.0	68.0	70.0	74.0	79.0	64.0	62.0	51.0	46.0	59.0
Marseilles	54.8	45.1	49.1	57.0	63.0	69.0	73.6	74.3	69.4	58.2	50.4	46.6	59.5
Nice	45.8	49.0	51.4	57.0	64.0	69.0	77.0	76.0	70.0	59.0	53.0	47.0	59.0
Florence	41.0	45.0	48.0	56.0	61.0	67.0	73.0	74.0	67.0	58.0	50.0	44.0	59.0
Port Philip (N. S. W.)	67.6	68.9	65.7	58.6	55.6	50.9	49.2	50.1	54.5	58.2	62.5	65.9	58.4
Auckland (N. Z.)	67.9	67.3	64.2	60.5	54.7	51.4	49.0	51.7	54.0	56.4	60.1	63.9	58.4
Avignon	42.0	43.5	50.5	55.0	66.0	72.0	76.0	76.0	67.0	60.0	50.0	43.3	58.2
Montpellier	42.0	45.0	47.0	53.0	60.0	67.0	72.0	75.0	71.0	61.0	52.0	46.0	57.6
Pau	41.2	43.6	48.8	51.8	61.6	68.2	70.6	73.4	67.4	58.2	46.6	42.8	57.4
Sienna	39.7	40.2	46.2	53.7	62.1	67.5	72.8	72.3	66.0	58.3	47.1	41.7	55.6
Baths of Lucca				53.0	60.5	63.0	70.0	71.5	63.6				55.0
Paris	35.6	40.5	43.5	49.6	58.1	62.5	65.7	65.2	60.4	52.4	44.2	39.2	51.5
*Cannes													61.5
*Valencia													51.4
*Gibraltar													73.0
*Lisbon													63.8
*Mexico													66.0
*Jerusalem	49.4	54.4	55.7	61.4	73.8	75.2	79.1	79.3	77.0	74.2	63.8	54.5	61.0
													63.6

* Added to the table by Sergeant Barwick.

AVERAGE TEMPERATURE, HIGHEST AND LOWEST TEMPERATURE, AND AVERAGE RAINFALL AT PROMINENT POINTS IN CALIFORNIA.

The following table shows the average temperature for the winter, spring, summer, and autumn; also the highest and lowest temperature and the average precipitation at the most prominent and well known points in California. This table makes it possible to compare different places in California with the table of foreign temperature that precedes this one.

NAME OF PLACE.	Average Temperature Winter	Average Temperature Spring	Average Temperature Summer	Average Temperature Autumn	Average Temperature Annual	Highest Temperature	Lowest Temperature	Average Precipitation— Inches
Redding	47.8	61.1	81.0	65.3	63.8	110	18	36.66
Red Bluff	46.8	59.8	79.7	63.2	62.4	110	16	27.46
Chico	47.3	62.4	81.3	64.2	63.8	110	18	20.84
Oroville	52.0	64.5	78.8	64.3	64.9	102	20	22.11
Marysville	50.1	62.7	78.3	65.6	64.2	108	18	16.60
Auburn	46.2	56.4	74.3	61.7	59.7	106	13	33.15
Sacramento	48.3	59.5	71.6	61.6	60.2	108	19	19.80
Woodland	48.3	61.6	77.7	63.8	62.8	106	19	16.60
Stockton	48.1	59.7	72.3	61.7	60.5	110	18	13.54
San Francisco	51.3	54.6	58.5	58.2	55.7	95	33	24.25
Petaluma	48.2	55.9	64.2	57.7	56.5	103	18	22.32
Oakland	49.8	55.3	60.5	56.7	55.6	103	25	24.54
Napa	48.9	59.6	69.6	59.1	59.3	104	18	23.36
San José	49.2	56.6	66.2	58.9	58.0	108	24	12.95
Santa Cruz	51.8	57.7	62.2	59.6	57.8	98	30	25.88
Monterey	50.9	56.7	61.6	57.1	56.6	90	25	14.96
Fresno	50.2	64.9	84.1	67.6	66.7	115	18	9.57
Visalia	45.4	59.4	80.8	60.3	61.5	109	18	9.82
Sumner	49.6	65.0	85.1	65.5	66.3	113	18	5.02
Santa Barbara	54.3	59.4	67.7	63.1	61.1	102	28	16.92
Los Angeles	53.6	58.4	67.8	62.7	60.6	112	28	17.64
Anaheim	56.0	64.3	73.1	66.7	65.0	108	25	11.01
Newhall	48.3	58.9	74.0	62.3	60.9	114	18	14.63
Riverside	50.4	64.1	73.7	65.7	63.5	105	25	8.16
Colton	52.0	62.7	78.3	65.3	64.6	116	18	9.84
Poway	50.7	57.6	68.8	60.8	59.5	110	21	14.15
San Diego	54.6	58.1	66.8	62.6	60.5	101	32	11.01

CLIMATIC COMPARISONS OF SANTA BARBARA WITH THAT OF SAN REMO AND MENTONE.

By Sergeant JAMES A. BARWICK, Observer Signal Corps, Sacramento, California.

Mentone and San Remo's climate, compared with Santa Barbara during each month of the year, shows that that of Santa Barbara is far superior as a summer and winter resort. The summers of San Remo and Mentone are as hot as those of the Sacramento and San Joaquin Valleys, and therefore cannot compare favorably with Santa Barbara, which has the finest and best summer temperature of any place on the Pacific Coast. The following temperature tables of Santa Barbara were compiled from Mr. Hugh D. Vail's records for 1885, 1886, and 1887, and is the average of these years. Those at Mentone are from M. de Brae's record of ten years. They are a valuable addition to tables already published for comparison with the California climate. Santa Barbara will be seen to far excel either San Remo or Mentone as a winter resort. Comparing Santa Barbara in summer with the Italian climate, is simply a waste of words and space: for the table of comparison tells more plainly and more eloquently the great superiority of the climate of Santa Barbara over the places mentioned. The table is as follows:

Santa Barbara, Mentone, and San Remo's Comparative Temperature Tables.

MONTHS.	Mean Average Monthly Temperature at Santa Barbara.	Mean Average Monthly Temperature at Mentone, France.	Mean Average Monthly Temperature at San Remo, Italy.
January.....	54.3	48.2	47.2
February.....	55.6	48.5	50.2
March.....	56.4	52.0	52.0
April.....	58.3	57.2	57.0
May.....	60.2	63.0	62.9
June.....	62.6	70.0	69.2
July.....	65.7	75.0	74.3
August.....	67.0	75.0	73.8
September.....	65.6	69.0	70.6
October.....	62.1	64.0	61.8
November.....	58.0	54.0	53.3
December.....	55.3	49.0	49.3
Average for twelve months..	60.1	60.4	60.1

The lowest temperature ever recorded at Santa Barbara was 28.5 degrees, during the cold wave of January, 1888: while an acknowledged minimum temperature in ten years at Mentone has been recorded as 32 degrees. But Mr. Bennett in his book says: "In more severe winters I have repeatedly known the thermometer to descend below 32 degrees several nights consecutively, near the seashore, and at the outlet of the torrent beds, especially in the western bay. Slight films of ice then form on shallow pools on the road and near the torrents."

This has occurred at Santa Barbara upon but one night, and not as at Mentone several nights consecutively. The above table is one of the strongest advocates for Santa Barbara as being the very best winter climate in the

northern hemisphere from year to year and month to month. Dr. Bennett says of Mentone, speaking of the ten years' mean obtained by him from 1859 to 1869 for six months each year, and those obtained by M. de Brea's ten years' record from 1850 to 1860, that such results show how very uniform the climate of Mentone is, especially when a sufficiently large number of years are thus compared. Now, if Dr. Bennett thinks the climate of Mentone so very uniform, what would he think of the comparison as above with Santa Barbara: the latter's mean yearly temperature as deduced from ten years of observation by different parties, with observations at different hours, is 60.2 degrees, while in the above table the mean for each month and the year are the average of the three years—that of 1885, 1886, and 1887, and are the same as that made by other parties. It ought to do a Californian good to look at each month of the above table, and see how much warmer the Santa Barbara climate is in the winter, spring, and fall, and how much cooler it is in the summer than the far famed and much advertised Mentone and San Remo. Santa Barbara had two hundred and fourteen clear days out of two hundred and eighty-nine that were observed during 1887 by Mr. Hugh D. Vail, from whose records the above facts are obtained. Mentone and San Remo has but an average of two hundred and fourteen clear days out of three hundred and sixty-five. This comparison speaks much, yes, very much indeed, for Santa Barbara—not only as a winter resort but a summer resort as well. Mentone and San Remo have about as hot a summer temperature as does Riverside and the Sacramento and San Joaquin Valleys, and being much more moist than the California points mentioned, would make an atmosphere of almost suffocation, like New York, Philadelphia, and other eastern cities.

IRRIGATION AND FORESTRY CONSIDERED IN CONNECTION WITH MALARIAL DISEASES.

By H. S. ORME, M.D., President of the State Board of Health.

The subject of irrigation in a sanitary point of view has for some time occupied the attention of physicians and other scientists. It is a subject upon which opinions differ, and in a country where the system is so extensively practiced as in California, it becomes of the first importance to ascertain its effects upon the general health of the population. The study is an interesting one to the sanitarian, on account of the different effects observed in the different localities.

Irrigation has been practiced in California since the establishment of the early Missions, more than a century ago; but little improvement has been made in the application of the system, the object of the cultivator being to get the water upon his land without regard to the methods employed. The establishment of irrigation companies, however, bids fair to remedy this evil, and careful investigation and scientific research will doubtless soon develop the best methods of irrigation and their proper application to different localities. I have thus far personally investigated this subject only in the locality in which I reside (Los Angeles and vicinity), and the result of my observations convinces me that no evil effects are to be dreaded from irrigation *when properly conducted*. The higher lands, when planted with trees and vines and well irrigated, show no traces of malarial influence. The soil, being a gravelly loam, readily absorbs the moisture, and the conformation of the land affords ready surface and subsoil drainage.

It is mostly on alluvial lands that evidences of malaria are manifest. In some sections along river banks the soil, fertile with humus (the dead matter of prior vegetation), is charged with the elements of malaria, which only await a summer temperature above 60 degrees and an upturning of the surface to induce that poisonous fermentation which destroys health and endangers life. Such regions, however, are limited, and wherever the character of the land renders it susceptible of drainage, the evidences of malaria disappear. In many instances, where diseases are attributed to malarial influences, I am convinced that the true source of the evil lies in the habits of the people and the disregard of sanitary laws. Improper food and clothing, reckless exposure, the use of surface water for drinking purposes, and, above all, personal uncleanness, will engender diseases closely allied to those produced by malaria, and these conditions are too often to be found among the lower classes of our people. It is undoubtedly a fact that the distribution of large quantities of water over a great extent of land surface, and allowing it to stagnate, is an active agent in producing malarial diseases. For example, the willow swamps adjoining the south end of Tulare Lake in 1860, 1864, and 1868 were great hotbeds of malaria. During the heavy winter rains hundreds of acres were overflowed, and remained for months great, stagnant lakes, poisoning the air with their deadly exhalations, fatal as those of the upas tree. *Irrigation, in order to be innocuous, must go hand in hand with drainage.* This fact has been demonstrated time after time, by the drainage and cultivation of

marshes whose noxious exhalations had previously rendered their vicinity uninhabitable, but which, after drainage and cultivation, became healthful and fertile lands. These results are due to the removal of the superabundant moisture and the conversion of the decomposing organic matter into plant food.

The rainfall of the past few years, especially in the southern portion of the State, has been greater than usual. We may, therefore, look for an increase of malarial diseases, especially upon the low, flat lands, during the ensuing summer and autumn. The upland sections will probably not be affected, owing to the porosity of the soil and consequent subdrainage. From the fact that localities having all the natural conditions that indicate malaria, such as uplands remote from the sea, shut out from the health-giving influence of the prevailing winds by ranges of intervening hills, and having a high summer temperature, with abundant irrigation, exhibit no symptoms of malaria, while lands nearer the ocean, upon the open plain, exposed to the full force of the daily sea breeze, and where one would naturally least expect to encounter malarial influence, often develop it in a virulent form, is conclusive proof, to my mind, that the exemption of the first named localities is due to ample drainage, and the malarious character of the second may be attributed to the want of it. When the question of irrigation becomes thoroughly understood, and is practiced upon scientific principles, there will, in my opinion, be little danger from this source. This will doubtless be accomplished, as I have before stated, under the influence of the irrigation companies or societies already formed, and who are giving the subject their earnest attention, both in an economic and sanitary point of view. In this relation the "West American Scientist," in an article on "Forest Influence on Climate," in a paper read before the Royal Meteorological Society of London, by Dr. Woeikof, states that the first scientific investigation of the influence of forests upon climate was made by the establishment of the Bavarian forest meteorological stations. Germany, France, Switzerland, Italy, and other countries followed this example. In general it has been found that during the warmer season the air and earth temperatures are lower in the forest than in the neighboring woodless localities: that their variation is less, and that the relative humidity is greater. A discussion of this question shows that forests materially influence the temperature of neighboring localities, and that they cause the summer to be cooler in regions situated further in the interior than those nearer the sea. Hence forests exert an influence upon climate which does not cease at their borders, but is felt over a greater or less district, according to the size, kind, and position of the forests. Thus climate may be affected by the planting or destruction of forests.

Therefore, in this connection the subject of forestry or arbor-culture may be properly considered as prophylactic to malarial or miasmatic diseases. It is a well established fact that in malarial districts the planting of shrubs and trees has had the effect to greatly modify, if not entirely remove, the malarious influence. The *Helianthus*, or sun flower, which possesses superior power as an absorbent, has been successfully used in various localities, notably in the marshes near the Federal Capitol, once reported so prolific of malignant fevers. The bayous and lagoons formed by the inundations of the Mississippi River in Louisiana would naturally be regarded as the headquarters of malaria, yet this district enjoys a comparative immunity from malignant fevers, owing, it is believed, to the influence of a large flowering aquatic plant, belonging to the natural order Onogræaceæ (*Jussiaea grandiflora*), which grows there in luxuriant abundance. But far

more efficacious than all, owing to the rapidity of its growth, its wonderful powers as an absorbent, and the balsamic exhalation of its essential oil, is the Australian blue gum tree (*Eucalyptus globulus*). The genus eucalyptus contains over seventy species, of which six or eight have been introduced into California. Inferentially it may be said, that similar properties prevail among the species, though they may differ in their proportion of properties.

In a valuable paper read before the Medical Society of the State of California, Dr. W. P. Gibbons says: "It has not been proved, though asserted until belief is established, that the aroma of the eucalyptus is effective in preventing the incubation of intermittents. The exceedingly rapid growth of the tree is dependent upon the quantity of water which is accessible to its roots. The proverbially unhealthy atmosphere of swamp lands is due to stagnant water. Where currents are established by drainage or by excess of water, the cause of malarial fever if not entirely removed, is materially abated—it would be removed if the drainage were complete. Let us look at the results which naturally follow the planting and cultivation of some kinds of forest trees. In eight years the eucalyptus will attain a diameter of eighteen inches and a height of fifty feet. Experiments which I have made determine these facts: A branch of this tree which contains one hundred and five square inches of leaf surface, will absorb 3.25 ounces of water in eighteen hours. The entire tree will furnish an area of three hundred and ten thousand five hundred square inches of leaf surface, and the amount of water daily absorbed by the roots would equal six hundred and nine pounds or seventy-six gallons. Given a stagnant swamp of two hundred acres, each acre having two hundred trees, the amount of water daily absorbed by the roots would be three million and forty thousand gallons, or four hundred and five thousand three hundred and thirty-three cubic feet. This would be equal to a constant stream running at the rate of three miles per hour, two feet wide, six inches deep."

These results, wonderful as they may seem, are undoubtedly correct, and illustrate with vivid force the importance of planting this tree in malarial districts, not by setting out here and there a tree, but by planting them in forests, as has been done by Mr. Nadeau in the vicinity of Los Angeles, where the largest artificial forest in the State was planted by him. Mr. Nadeau, in December, 1875, sowed the seed of the eucalyptus in his nursery, and in six months thereafter transplanted the young plants in the location intended for their permanent occupation (eight feet apart), and now these trees have attained a growth of from seventy-five to one hundred and twenty-five feet in height, with an average diameter of twelve to fifteen inches. The extent of this grove is about one hundred acres, and for fuel, counting fifty cords to the acre, at \$5 per cord, would amount to \$250 to the acre. Its value for fuel and timber (at this time the trees being ten years old) is not less than \$20,000. Were this tree to be liberally planted in our marshes and swamps at intervals through the great valleys of the Sacramento and San Joaquin, there can be no doubt that the effects of malarial exhalations would be in a great measure neutralized. The Central Pacific Railroad Company has done much to bring this tree into notice by planting different varieties of it along the lines of their road, thus giving an opportunity to judge of the species best calculated to thrive in different soils and climates. Mr. J. Bosisto, President of the Pharmaceutical Society of Victoria, points out that the eucalyptus probably exerts its influence in this respect: "First, physically, by powerful root action in absorbing humidity from the earth; by its being evergreen, and in continued action; by the abundance of its leaf surface; by its evaporation of

water, oil, and acid under a perpetually genial atmosphere: and, second, chemically, by the power of its volatile oil and volatile acid, abundantly present in the plant and air to produce peroxide of hydrogen." According to Dr. Cosson: "Since the growth of plantations of this tree around the Lake of Fezzara, in Algeria, the malaria, which formerly was intense, has almost disappeared. The village of Ain Mokra, according to Captain Ney, furnishes an equally striking instance. The station was formerly so unhealthy that it was necessary to change the French garrison every five days on account of the number of men attacked. Fever has, however, become much more rare since plantations of eucalyptus trees have been made on the shores of the lake and the sides of the railway, which include altogether sixty thousand trees. A writer in the *'Paris Temps'* mentions astill more singular effect, namely, that the parasites (*phylloxera*, etc.) disappear from vines growing near the eucalyptus. The experiment made during several years in several vineyards, has been uniform in its results. It is interesting, in connection with these facts, to observe that the leaves of this plant contain an ethereal oil, of which even half-dried leaves contain 6 per cent, and that this oil, according to Gimbert, is a very powerful antiseptic. The oil is officinal in the last edition of the United States Dispensatory. It will preserve blood and pus as long as carbolic acid (five months and more), and far longer than oil of turpentine. It prevents also the appearance of fungi or vibrios. These observations have received independent confirmation from Binz, in Germany."

With such evidence before us, we can scarcely question the fact that the eucalyptus exercises a potent influence in preventing the spread of malarial diseases, and if the attention of our people generally can be once drawn to the importance of its extensive cultivation, especially in districts where malarial diseases prevail, we may anticipate most important and beneficial results.

We might adduce many more evidences of the value of the eucalyptus, not only as a remedial agent, but for fuel timber, as a shade tree, as a protection to orchards and vineyards against the force of winds and the depredations of insect pests, and as a gatherer and dispenser of moisture: but we think enough has been said to convince the most skeptical of its value. When our agriculturists, horticulturists, and vine growers can be brought to understand that their best interests require them to study and practice collectively the all important triad—irrigation, drainage, and forestry—we shall no longer be called upon to write papers upon the subject of irrigation as an agent in the induction of malaria.

BACTERIOLOGICAL RESEARCHES ON YELLOW FEVER IN HAVANA.

By CHARLES FINDLAY, M.D., of Havana.

Every true lover of science must hail as a happy event for the furtherance of the bacteriological study of yellow fever, the visits made by Dr. G. M. Sternberg to Brazil, Mexico, and Cuba, for the purpose of determining whether the results of previous investigators, who claimed to have obtained characteristic colonies from yellow fever products, deserved to be considered as scientifically demonstrated.

Two courses were open to Dr. Sternberg for the fulfillment of his task: Either to verify the results by repeating the experiments according to the same methods employed by the original investigators, or to substitute a technique of his own, more in accordance with the improved systems of bacteriology, and to demonstrate the fallacies which the previous researches had been liable to. Dr. Sternberg has chosen the latter, perhaps the only one which his limited time would allow. By this plan, he has shown that the results announced were not obtainable by his own more accurate methods, and his judicious criticism has convinced us that our own *technique* had not been sufficiently precise to warrant definite inferences. Whatever disappointment this demonstration may have caused, has been, however, fully compensated by Dr. Sternberg's courtesy in making us acquainted with his own admirable methods of investigation, thus enabling us to test for ourselves our previous experiments.

In August, 1886, I undertook, in collaboration with my friend, Dr. Delgads, to inoculate blood and blister serum of yellow fever patients in sterilized agar-agar jelly, having failed to discover in those liquids any micro-organism directly recognizable under the microscope. For this purpose the finger of the patient was washed with soap and water and then with strong alcohol, after which it was pricked and the blood directly inoculated in the jelly by means of a sterilized platinum needle. The blister serum was obtained by means of a cantharidine solution in collodion, the skin having been previously washed with soap and water, alcohol, bichloride solution, and again with alcohol. After twenty-four hours the needle was introduced into the unbroken blister and directly inoculated into agar-agar jelly. By this means we obtained in a fair proportion of cases yellowish-white colonies at the point of inoculation and along the track of the needle, sometimes combined with another orange-yellow colony. Under the microscope we found the colonies to be composed of micrococci, variously grouped. Inoculations in dogs, rabbits, and guinea pigs gave no evidence of pathogenic properties: but similar white colonies were obtained on the fourth and fifth day from blood and blister serum of the inoculated animals, and, strange to say, the same white colony resulted, whether the animal had been inoculated with the white or with the orange-yellow colony.

After continuing our successful experiments until October of that year, we failed in all our attempts during the succeeding months until the following June. We had noticed, moreover, that the results were always negative when we attempted the same cultures from patients presenting

suppression of urine, or symptoms of uræmia. The same restrictions and interruptions were likewise observed by us the following year.

In June, 1887, we again obtained our white and orange-yellow colonies, and, moreover, ascertained that the white was characterized by the tendency of the micrococci to form tetrads, either simple or compound, and which often carried irregular chains of three or four elements appended to one or more of their angles. Inoculations upon rabbits and guinea pigs again gave negative results. We were able to verify the presence of tetragenin in some twenty cases of yellow fever, between the months of June and November of that year, and on revising our cultures of the previous one the tetrads were also found, as also in two cultures from the kidney and liver of an autopsy made in 1886.

Some control-experiments upon healthy, non-acclimated subjects gave negative results, with one exception, which afterwards proved to have been in the period of incubation of a severe attack of yellow fever, which manifested itself eight or ten days later.

We sent specimens of our cultures to Prof. Welch, of the Johns Hopkins University, and to Dr. G. M. Sternberg, who both verified the presence of tetragenin in our cultures, though apparently of different varieties and mixed in most cases with bacilli, some of which liquefied gelatine. In the meantime Dr. Matienso, of Vera Cruz, had likewise obtained cultures from yellow fever products, and in one instance observed a tetragenus.

Dr. Gibier, on examining our cultures, did not admit that they were typical tetragenin, but averred that they were morphologically identical with Dr. Freire's. There is, however, this difference, that Dr. Freire's cultures liquefy gelatine, whereas my own, in pure cultures, do not.

Dr. Sternberg failed at Rio Janeiro to obtain any cultures from specimens of blood collected by himself from yellow fever patients: but from samples which had been collected for him, and according to his own method, by Dr. Arango Goes, he obtained a yellow colony consisting of a large micrococcosm in tetrads, like some which he subsequently found in my own cultures.

Finally, Dr. Sternberg made a number of experiments and surface cultures in Rio, Vera Cruz, and Havana, by which he satisfied himself that yellow fever patients, as also some of the other inhabitants of yellow fever countries, habitually present upon the surface of their skin micrococci in tetrads.

These coincidences appeared somewhat remarkable. On the other hand, having practiced since 1881 several successful inoculations by means of contaminated mosquitoes, as described in the "*American Journal of Medical Sciences*" (October, 1886) and elsewhere, we ascertained that mosquitoes which had been made to sting yellow fever patients, and afterwards were inclosed in phials containing sterilized agar-agar jelly, developed colonies of tetrads like those which we had obtained from yellow fever products.

In spite of these results, Dr. Sternberg's objections to our methods of investigation, coupled with his assurance that no evidence of tetragenous germs had ever been found either in the blood or tissues of yellow fever subjects, examined according to approved methods, induced us to accept as a plausible explanation, that our cultures might have proceeded from surface germs; provided, of course, that the experiments which Dr. Sternberg was about to undertake should confirm his previous experience.

During his stay in Havana Dr. Sternberg limited his researches to cadaveric products. He performed, as stated in his communication to the Havana Academy of Medical Sciences, ten autopsies upon yellow fever

subjects, within from two to five hours of their death, and with the following general results:

Heart Blood.—In two cases colonies of bacillus (*a*) were obtained, in the other eight the results were negative.

Urine, collected in the bladder. Three cases gave colonies of different bacilli, and seven proved sterile.

Kidney.—In six cases micro-organisms were developed, four remaining sterile.

Liver.—Three cases gave colonies of bacilli, and seven were sterile.

Contents of Stomach and Intestines.—In eight of the ten cases bacillus (*a*) was found present.

Finally, in three cases, pieces of liver and of kidney were soaked in bichloride solution (1 per cent), then kept forty-eight hours wrapped in muslin or tissue paper saturated with the same solution. At the end of that time cultures were made from the interior, where the bichloride had not reached. In one of the three cases both the liver and the kidney gave colonies of large micrococci in tetrads like my own, besides others in short chains and a liquifying staphylococcus. An Esmarch tube, prepared by Dr. Sternberg from these micrococci, and which he kindly left with me, presented very characteristic isolated colonies, from a single one of which I obtained a small bacillus growing into a spirillum, and also micrococci in tetrads and in short chains.

This last result of Dr. Sternberg's researches certainly shows that tetragenous germs do find their way into the tissues of yellow fever patients, and it is quite possible that they may have existed in other cases likewise, and that the failure of bringing them into existence may be due to our ignorance of the measures best calculated to do so.

It behooved us, therefore, to resume our former experiments upon the blood and blister serum, with such modifications as might exclude the sources of error to which our attention had been called. We therefore adopted the following plan for collecting our material:

Finger Blood.—1. The finger having been carefully washed with soap and water and with absolute alcohol, by means of sterilized rags or cotton, a *surface culture* is made according to Dr. Sternberg's method (a couple of drops of sterilized bouillon are expelled from one of his bulbs, and after rubbing the skin with the capillary joint, the expelled portion is allowed to reënter the bulb, and the latter is again sealed).

2. The finger having been pricked with a sterilized needle, at the spot where the surface culture has just been made, the blood is collected in dry bulbs. The blood is also directly inoculated into solid agar-agar jelly.

3. The same finger is then washed with alcohol, then with bichloride of mercury (1 per cent solution), and finally with absolute alcohol, and a second surface culture is taken.

4. The spot from which this second surface culture has been taken, is again pricked and the blood collected in sterilized bulbs, or inoculated directly into solid agar jelly.

For Collecting Blister Serum.—The following articles are prepared beforehand and kept in bichloride solution (1 per cent) until required for use: Two rubber rings of four and six centimetres, respectively, inner diameter; a square piece of oiled silk; a square piece of muslin. The patient's arm having been carefully washed with soap and water, bichloride (1 per cent solution), and again with absolute alcohol, four small dots are marked on the skin to limit the space where the blister is to be applied. Four layers of cantharidine collodion are then applied: the smaller rubber ring is placed around the blister: the oiled silk over the ring: the larger ring

over the silk, and the muslin compress over the whole. A broad band of adhesive plaster fastens the dressing upon the arm, and a wire shield protects the blister. After twenty-four hours the dressing is removed and the serum collected from the *unbroken* pouch in sterilized bulbs, or used to inoculate solid agar jelly.

This technique was strictly adhered to in the case of a soldier in the fourth day of fatal yellow fever, occupying bed No. 46, fifth ward, of the Military Hospital, in Dr. Rivas' charge, on the twenty-seventh and twenty-eighth of June. The results were as follows:

1. *Surface Cultures*.—Both the cultures prepared *before* and *after* the skin had been washed with bichloride remained sterile, showing, after the lapse of thirteen days, absence of surface germs at the spot where the blood was collected.

2. *The Blood before the Application of the Bichloride*.—(a) Of two solid agar tubes inoculated directly from the finger blood, one gave a white, creamy colony on the fifth day, consisting of a micro-organism in tetrads and short chains, the other remaining sterile. (b) The blood collected in sterilized bulbs was used the following day to prepare a gelatine Esmarch tube, which was thought to have remained sterile, but a cloudiness was observed, composed of innumerable dots (colonies?), from which a new tube has been inoculated.

3. *Blood after the Application of Bichloride*.—(a) Two tubes of solid agar jelly inoculated directly from the finger blood have remained sterile. (b) The gelatine Esmarch tube, prepared with two or three drops of blood collected in a sterilized bulb, produced a number of isolated colonies, some of which were inoculated in agar; but later on, the gelatine having melted with the heat, a sediment, partly white, partly yellow, settled at the bottom, and new cultures were obtained from the latter.

4. *Blister Serum*.—(a) The two tubes of solid agar, directly inoculated from the blister serum, remained sterile. (b) A gelatine Esmarch tube prepared with two drops of pure serum, five hours after collection, produced a number of isolated colonies, mostly of a yellowish brown, with smooth edges, but a few were somewhat lobate. After awhile a whitish semi-fluid film formed over the gelatine. Separate cultures were made from this film. Finally the gelatine was liquified.

With the exception of the direct culture in agar jelly from blood *before* the application of bichloride, and which gave only a micrococcus in tetrads and in short chains, like those obtained by us last year, the other cultures from the blood *after* the bichloride application, and from pure blister serum, gave micro-organisms of two, or possibly three, different kinds.

1. Micrococci in tetrads, intermixed with some in short chains, similar to those obtained by us in 1887.

2. A small bacillus, not unlike Dr. Sternberg's bacillus (a) when single, but generally occurring in short chains, agreeing in every respect with the description of Babés' *chainettes*. The specimens derived from the blood culture are somewhat more slender than those from the blister serum, and resemble more closely the chains contained in the kidney section prepared by Dr. Sternberg from specimens in Dr. Lacerda's collection, and which he was kind enough to give me. In drop cultures the short bacillus is seen to be knobbed, and is quite mobile. The short chains are also knobbed, and the larger ones present several articulations or joints which are quite independent of the knobs: the latter corresponding to the stained portions of the dry specimens. In some of the filaments false branches appear, both in the moist and dry preparations, suggesting the idea of a clodothorix.

3. A preparation from the semifluid film, which formed over the surface of the gelatine Esmarch tube, prepared from pure blister serum, showed typical tetrads like those observed in the blood, and also Babés' *chainettes* and branched filaments (clodothorix?). Most of the filaments or *chainettes* were found to carry along their sides or at their extremities colored grains (spores?) variously grouped, some in regular tetrads, and which could not be morphologically distinguished from the other cocci in tetrads, seen in the same preparation.

A rabbit received by an intra-peritoneal injection three centimeters of a bouillon culture of the bacilli, which I call "*Babés' chainettes*," without any pathogenic manifestation.

The above results are given merely to show that our tetragen in this instance could not be attributed to surface germs, and that it is yet possible that one or several of the micro-organisms pointed out by previous observers and by Dr. Sternberg himself, may be found to play an important part in the etiology of the disease.

Since writing the above, Dr. Delgads and myself performed, on the thirty-first of July, an autopsy, three hours after death, on a subject who had died in the third day of yellow fever at our Military Hospital. The juices from the liver, kidney, and spleen were collected in Sternberg bouillon bulbs, with the necessary precautions, cultivated in semi-fluid gelatine at 30 degrees to 32 degrees C., and from the whitish sediment that formed after forty-eight hours, agar Esmarch tubes were prepared. Round, pale, straw-colored colonies, with smooth edge, were obtained from the three organs; they consisted of our micrococcus in tetrads and short chains. •

Pieces of liver, kidney, and spleen were soaked in (1 per cent) bichloride and wrapped in cloths steeped in the same solution. After forty-eight hours cultures were prepared from the kidney and spleen, and also direct stick cultures made in solid agar jelly. The piece of liver was beginning to decompose and was, for that reason, discarded. From the kidney, both the direct inoculation and the Esmarch tubes gave our micrococcus in tetrads and short chains. The direct inoculation from the spleen also produced the same microbe, but the germs failed to develop in the Esmarch tubes, the bichloride, perhaps, diffused too freely in the substance of the organ, thereby impairing the vitality of the micro-organism.

The colonies from stick culture in solid agar are at first white with a slight yellow tinge, but as they grow older the yellow color becomes more distinct, though varying in intensity in different samples even from the same source.

Not having found, in this instance, any trace of the bacillus in short chains, resembling Babés', described above, we infer that their presence in the former case may have been due to a "mixed infection" which, we believe, generally occurs in *melanic* cases.

Inoculations in rabbits and guinea pigs with pure cultures of our microbe have hitherto given negative results. We have also tried them upon ourselves and upon two non-acclimated subjects in Havana. In Spain, Dr. Ferran, of Barcelona, to whom we had sent samples of our old (last year's) cultures, tried upon himself and upon his assistants subcutaneous injections, and swallowed liquid cultures from our own. The results have so far been negative. We purpose, however, resuming our experiments with our fresh material, for it is possible that, notwithstanding their inefficiency to produce immediate pathological manifestations, such inoculations might confer immunity.

So far we have only succeeded in reproducing the disease by the somewhat

irksome process of our "mosquito inoculation," as described in the "American Journal of Medical Science" (October, 1886). During the present year we have only applied the process to one person, employing two infected mosquitoes. A mild attack of non-albuminuric yellow fever resulted after twenty-one days' incubation. None of the persons so inoculated, in the course of the last seven years, have been subsequently attacked with yellow fever after the first mild manifestations which followed the application of the mosquitoes in about one fourth of the cases. Of the others, which had shown no immediate effects, some have subsequently had a mild attack, but no fatal case, and only two albuminuric have been recorded among the thirty subjects or more in whom the applications had been made during the summer months, and according to the conditions which we have repeatedly indicated (absence of uræmic or typhoid symptoms, and limits between the third and sixth days of the disease in the patient from whom the insects are contaminated).

Believing as we do that mosquitoes are the habitual agents of transmission of yellow fever, we recommend that patients attacked with the disease should be protected, as far as possible, against the bites of those insects, in order to check its propagation to others. Perhaps some local application, such as quinine in alcohol, to the uncovered parts of the body might be useful for that purpose.

CUBA IN ITS RELATION TO THE SOUTHERN UNITED STATES; ITS DANGER AS A DISEASE-PRODUCING AND DISTRIBUT- ING CENTER.

By WOLFRED NELSON, C.M., M.D., member of the College of Physicians and Surgeons, Province of Quebec, Canada; late Board of Health, State of Panama, South America; correspondent State Board of Health, California, etc.

Ere considering the City of Havana and its surroundings, climate, and past history, I shall commence by describing the Military and Naval Hospital there. It lies within the city proper, and is an immense building, built of stone, originally intended by the Spanish Government for tobacco warehouses, at the time when the Government controlled that vast business. Later, when the control ceased, the Government had the building fitted for a huge military and naval hospital.

It is two stories high. Perhaps the better way to convey an idea of its vastness will be by stating that, mainly on the upper floor, are sixteen hundred beds. There are military and naval wards, wards for the insane, smallpox, etc. The military and naval wards are subdivided into medical and surgical sections, and have their own staffs.

The wards are very large, being the full breadth of the building. They are called *salas*, or halls. Roughly, they are one hundred feet long by, say, forty feet wide, with windows on either side, with terminal rooms for the pharmacies, doctors, nurses, etc. They are well ventilated and get no end of air—such as it is—and no end of sunlight. The beds are arranged in long rows down the sides of the wards, the patients looking towards each other; thus there is a large central aisle.

With Dr. Daniel M. Burgess, formerly of the United States army and now a practitioner in the City of Havana, I visited the buildings, and, thanks to the courtesy of Dr. Fernandez, of the Spanish army, every facility was granted us for seeing things just as they were.

In a large ward containing, say, seventy patients, we saw and carefully examined seven cases of yellow fever, noting the various conditions of the patients—such as black vomit in one case, urine in another, later noticing its testing—the examination of the very full and careful clinical notes of the cases, etc. I was most careful in my mental note taking, contrasting what I saw with my five years' experience on the Isthmus of Panama, and from having seen the disease on the West Coast of Mexico in the summer of 1885, when I traced the history of the Mexican epidemic, which was published *in extenso* in the last biennial report of the Board of Health of the State of California. I may add *inter alia* that ere "doing" the Military and Naval Hospital in the City of Havana, I had spent upwards of five months in the oldest city in the Island of Cuba, to wit, Santiago de Cuba, and, thanks to the courtesy of my friends Drs. Hartman, Urbano Guimera, Ros, and Castillo, I had opportunities for studying the disease in the Eastern Department of Cuba.

In military wards yellow fever patients are placed side by side with those suffering from any illness, no distinction being made. While this may surprise those who have not had long and close relations with yellow fever, it does not surprise me in the least. "Why," say you? Failing epidemic

conditions, there is practically no danger. I speak from knowledge. Again, failing the usual conditions noted in seasons of epidemic in Cuba, such as an irregular season, great heat, want of rain, etc., with a very high temperature—failing these, no new cases would develop, or so few as simply to prove the exception to the rule in Havana.

Referring to Isthmian experience, I may state that the Lady Superior of the Military and Charity Hospital in the City of Panama never knew a case of yellow fever to develop in a huge ward under her charge, a ward having one hundred and fifty beds. I simply cite this Isthmian experience to emphasize the above statement. In speaking so positively of the disease, I fall back on a close study of eight years of yellow jack and his kindred, and from having compared notes with profound students of yellow fever in the West Indies, Mexico, Central America, and the northern end of South America, private practitioners in dozens of localities, and naval and military surgeons wherever I could meet them. As you will gather by what is to follow, that vast system of hospitals in Havana, while being thoroughly infected with yellow fever, it is an exceptional thing for a case to develop in wards, outside of the epidemic conditions previously alluded to, and despite the fact that the air that enters the building is foul-smelling, being the fecal atmosphere noticed in all Spanish West Indian cities.

After carefully examining two of the long wards, and noting the corridors, the general cleanliness, and order, we descended the broad stone staircase to the main or ground floor of the huge quadrangle, and walked along the cloister-like passages, noting the huge storerooms on our right filled with medical and surgical supplies, etc. Here are vast quantities of stores, as this building issues them to all the hospitals, military and naval, in the Island of Cuba.

Now, then, pray remember the constant presence of yellow fever in that building; sailors from the vessels of war; newly arrived recruits from Spain; also remember the direct and wholly unrestricted communication between all parts of the building, etc.: patients, doctors, nurses, and orderlies moving about as freely as if no disease was present—in short, with absolute freedom, and, I may add, with the most perfect nonchalance. Nothing is thought of the danger—nothing. It is just as much a product of the Queen of the Antilles as her tobacco: it is so common, and such an every day affair, that it is a constant source of joking in all the theaters of Havana—a ghastly yellow joke. As a close student of yellow fever, and having seen the disease in various places, I was not surprised, knowing the indifference with which Spaniards and Cubans alike look on the disease.

If the danger of infection was confined to the building in itself my surprise would have ended there and then: but when I stop to reflect that the storerooms beneath the wards were filled with all sorts of stores, including hospital bedding, etc., it gave me food for thought. There can be no question in the mind of any student of yellow fever as to that vast hospital as a constant recipient and distributor of yellow fever. To repeat, despite the fact that the building is infected, and so to speak saturated, with the poison of yellow fever, it is an exceptional thing for a case to develop in the wards. During epidemic seasons it goes without saying that the disease has developed in the wards—the same as it does in all countries when the necessary epidemic conditions obtain. There can be, and is, no doubt in my mind that the hospital bedding, shipped about the island to other hospitals by the ordinary steamers, and by the various vessels of war, is infected: and such material or fomites, time and again, has established new foci of disease.

I can recall a limited epidemic in the fort at Caiminero, or the Port of Guantanamo. The disease broke out among a lot of new recruits, killed twenty-one of them, exhausted itself, and became quiescent. This was in the fall of 1886.

Probably but few of my readers are aware of the fact that Cuba, or the Queen of the Antilles, is almost a small island continent. Its length is seven hundred and twenty-one miles, or the counterpart of that of the coast line of California, the second largest State in the American Union. All the cities of Cuba, inland as well as on the coast, are garrison towns and ports. In the cities and towns Spanish troops will be found, and in all ports Spanish men-of-war of various classes. The main hospital in the City of Havana, in constantly supplying one and the other with stores, unquestionably is constantly creating new foci of disease. This statement I deem absolutely indisputable. Strange as it may seem, the Spanish Government does nothing, and the matter goes on as it has done during long decades, and as it will do to the end of all time (I mean Spanish time). Hence, yellow fever obtains in all the military and naval hospitals of the island, and nearly at all seasons of the year.

It is never absent in the City of Havana, there being a few cases even in the coolest weather, or when American winter visitors flock to that charming city to get an insight into things Spanish. While the City of Havana during that season is comparatively free from yellow fever, the City of Santiago de Cuba, at the opposite or eastern end of the island, always suffers most.

According to Dr. John Guiteras, of the United States Marine Hospital Service, a profound student and writer upon yellow fever, the City of Havana has had an annual epidemic for over one hundred years. July, August, and September are the fatal months of the year, and the Cubans, in their late insurrection against Spain, called those months their "Three Generals," as they had rendered them their greatest aid during the late insurrection, which lasted from 1868 to 1878, they meaning that yellow fever had swept their enemies away like chaff before the wind. During that insurrection two hundred thousand Spaniards lost their lives in the Island of Cuba, the vast bulk of them from yellow fever.

ACCLIMATION.

A word regarding an old time myth. It has been the custom of people to talk about the protecting influence of acclimation. There is no acclimation that protects against yellow fever—none. The only protection against the disease is to have experienced it. No modern student of yellow fever with whom I have the pleasure of being acquainted, whose opinion is worth citing, places one tittle of reliance in acclimation: and if that old theory needed a *coup de grace*, it has received it within the last three months in the epidemic of yellow fever that has swept the City of Sancti Espiritu in the Island of Cuba. "El Pais," a newspaper of that city, recently published the death rate, and, among other facts, stated that twenty-four children, all native born, had been swept away in a single day by *el mal del pais*, as they call yellow fever.

Now then, I ask a question: If there is anything in acclimation, why didn't it protect those native born children? And, I answer it in person, by stating, because there is nothing in acclimation.

We, as students of disease, must bear in mind that between epidemics numberless children are born, and when a new epidemic approaches they become food for it. While it is quite true that the mortality among native

born children and natives is somewhat less than among foreigners, still the disease sweeps them away. And, as a collateral statement to this one, I will cite the experience of my friend, Dr. Didier, formerly a practitioner at Guadaloupe, one of the French West Indian Islands, who for a time was one of the physicians to the Panama Canal Company, while my brother, the late Dr. George W. Nelson, was Resident Physician at the Canal Hospital in Panama. He informed me, that in off seasons, or when there was no epidemic in that pretty island, the children of creoles showed no symptoms of yellow fever, but when the necessary atmospheric conditions came about (that are so intimately associated with these epidemics and yet are so exceedingly difficult to describe) such children came down with yellow fever, and while the mortality among them was less, still many died. Having disposed of that old time myth, let us return to

THE CITY OF HAVANA.

The City of Havana and the Island of Cuba generally, is a constant producer and distributor of yellow fever, and by her geographical position and nearness (ninety-four miles to Key West, Florida), and with almost daily steam communication, she is a constant source of danger to all ports trading with her, particularly to all ports having almost identical climatic and geographical conditions. I refer particularly to Florida, Louisiana, and Alabama, bearing in mind their heat, their moisture, swamps, etc. Just so long as Spain neglects her duty, just so long will Cuba be a constant source of danger to all doing business with her; and, as seven eighths of all her exports come into the United States of America, the danger to the said States is greater than for countries receiving her goods after many days' travel. And even they are exposed. A limited epidemic of yellow fever in England in the fall of last year, was traced to a brig—copper-laden, from Santa Iago de Cuba—as may be gathered from my article in the last report of the State Board of Health, State of California, 1886. The constant source of peril is to the ports of the Southern United States. In May last, I left the City of Havana for New York. Upon getting upon the steamer "Hutchinson," of the Morgan Steamship Company, I noted among the steerage passengers a lot of filthy humanity—Turks. I also noted the careful way in which they were inspected, individual by individual, by Dr. Daniel M. Burgess, the Inspector of the United States Marine Hospital Service in Havana. These Turks were wholly unacclimated; that is, they had not had yellow fever. They had been spending some six weeks in the City of Havana, peddling and living in the slums of the city. As stated, I was present at the examination of these people, and they left the City of Havana in excellent physical condition, as far as the eye could judge. We sailed from Havana on the seventh of May, and as the quarantine season at Tampa, Florida, was not in force, the company could not refuse the sale of tickets. At that very time there was much yellow fever in the lower part of the city. On our way to Florida, I kept my eyes on these people, fearing that yellow fever would develop and that we should be detained on making the mouth of the Mississippi. They were an exceedingly filthy mass of humanity—men, women, and children—clad in rags.

On reaching Key West I saw my friend Dr. J. Y. Porter, the able President of its Board of Health, who came down to the steamer, and I directed his attention to them as a source of danger to any port at which they might land. As they were going beyond Key West, of course he had nothing to do with them. No passengers were allowed to debark there.

I stepped off on to the pier and was ordered back on the steamer. This was absolutely correct, and in strict keeping with what we know of keeping out yellow fever. Still, I noted the landing of many baskets of fruit covered with coarse matting that had been shipped from the lower part of the City of Havana, from spots noted for their foul odors and disease.

Among my fellow passengers it was my good fortune to meet Dr. J. W. Ekens, a retired practitioner, from Yorkshire, England. While he had had no experience with yellow fever, he had had a most extensive experience as a Health Officer in Yorkshire, and he fully agreed with me as to the danger lurking in such forms, that is, unless scientifically disinfected, *a la* Holt.

At Tampa, Florida, I sent a line to my friend Dr. John Wall, a profound student of yellow fever, and the President of the Board of Health there. At Tampa, Florida, the Turks went off in a small tender. Subsequently, I learned that Dr. Wall did not receive my letter until another steamer came in three days later, from Havana, when it and a letter from Dr. Burgess reached him together. Dr. Burgess wrote that he had learned that one of that same band of Turks had died of yellow fever in Havana early in May. Had my letter reached Dr. Wall in time he would have been powerless, as the quarantine was not in force. Immediately upon receipt of our letters he had the people hunted for, but they had gone to various localities. Upon getting to New Orleans I read my pencil notes to my friend Dr. Joseph Holt, whose Ideal Quarantine at the mouth of the Mississippi is the admiration of all writers and students of sanitary science. Dr. Holt took instant action, and notified the Government of Florida, and the Turks were hustled out of that State, *but not before one of them had died of specific yellow fever in Plant City, about the end of May or beginning of June.* This I subsequently learned in November, 1887, from my friend, the able President of the Jacksonville Board of Health, Dr. Neal Mitchell. I was then en route to Tampa, to see the yellow fever in that city. Hence my warning had not been in vain regarding those Turks. The Tampa epidemic I shall refer to later on. I simply refer to those Turks collectively, as an illustration of the dangers of rapid transit—rapid transit to benefit a steamship line and a few railroad magnates, a transit that has done the State of Florida more or less of damage by the yellow fever now raging there. After visiting Tampa last fall, and finding that my friends Dr. John Wall and Dr. J. Y. Porter were unjustly opposed by conscienceless individuals, I sent the Jacksonville "Times-Union" a letter, calling the disease yellow fever, properly so called, and warned the State *that this year it would be upon them.* (See "Times-Union" of November 30, 1887.) This rapid transit means that thirty hours after leaving the City of Havana one is in the City of Tampa, and ten hours after leaving Havana one is in Key West, an island of the Florida group.

Perhaps it will throw some light on this matter, if I state that I have seen a good deal of the Southern States. I refer to Florida, Louisiana, Alabama, etc. My trips to the South have been six in number, including two months spent in Louisiana, Florida, and Alabama, where I made my own observations and exchanged views with many veterans who have faced yellow jack in the field. During my visits to the Sunny South I added to my small knowledge of yellow fever by culling all that I could from many confreres with whom I was brought in contact. I also noted the geographical features, particularly of Florida, Louisiana, and Alabama, and saw all that was necessary to explain to my mind why yellow fever has so swept them in times past. As already stated, I noted very particularly the swamps, heat, excessive moisture; in short, each and all of the condi-

tions that extended a constant and generous welcome to yellow fever germs. I say germs.

Again let us return to the Military and Naval Hospital. Leaving the storerooms, a polite orderly took us along the cloister or corridors made by the Moorish arches and stone floors, across the central court, or *patio*, of the huge building, past trees and luxuriant vegetation, and a wealth of flowers, the whole making a most effective contrast against the white-washed walls of the building. On we went, past all this pleasantness, finally passing below a stone arch, past the wards for the insane, and into an open space back of the main building. I mean the sea face of the huge quadrangle, and we stood facing an upper arm or horn of the Bay of Havana. The rear walls of the building are within say one hundred feet of the seawall. To the right we passed the dead-house. We were told that often there were seven or eight corpses in it at one time. It is within a few feet of a very narrow and dirty lane, on which faces a vast warehouse for sugar, of course, for export. The great bulk of the sugar goes to the United States of America. In connection with sugar let me say to the students of yellow fever that the favorite method of shipping sugar is in sacks. Could better fomites be found.

Passing from sweet to other themes, we will now consider the hospital closets. They project in part over the water; they are quite as foul smelling as one would expect under a tropical sky. The seawall is of a soft coralline stone, so soft that the masons may be seen shaping it with their broadaxes. The rise and fall of the tide is practically *nil*. It is hardly necessary for me to dwell on what may be expected from soft porous stone, almost spongy in texture, constantly surcharged with fecal matter from the huge hospitals now under consideration. The water there is very shallow, in some places but a few inches deep. Need I describe it to you? Within one hundred and fifty feet of the closets, the *light draft American schooners* discharge and receive cargo, anchored for days together in the foul waters of that part of the harbor, waters that practically are never changed.

Having carefully noted each and all of the conditions, the position of the shipping, and the hospitals and buildings, we again retraced our steps, passing cloister after cloister, past several wards filled and partly filled with patients, and reached the main entrance, where we said *adios*, or farewell, to the military orderly who had shown us over the building and premises. We then passed along the main front of the building, and turned down the narrow, dirty street to our left, following the hospital walls on past the dead-house and closets already described, and stood on the wooden pier, looking directly back on the spots just referred to.

At the end of the pier was the American brig "Hyperion," of Philadelphia, discharging coke, certainly not two hundred feet from the closets. Dr. Burgess pointed out another pile of coke just discharged by another vessel, that having laid alongside the pier instead of at its end, like the "Hyperion," had been bow on to the closets, and within one hundred and fifty feet of them. Remember the vessels and their vicinity to hospitals, etc. Frequent cases of yellow fever appear in these vessels, and they return with cargoes of sugar to American ports, the whole constituting a constant source of danger, particularly to the Southern United States.

The hospitals lie at the upper end of this arm or horn of the bay. There are many slaughter houses there whose blood, refuse, etc., is added to the perpetual nastiness thereaway. Dr. Burgess informed me that at times enough blood ran into the horn to color the waters a bright scarlet. A small river, so called—a mere rivulet—empties into the horn, but its

waters, except during the wet or rainy seasons, are so scanty as to be of no value for flushing purposes. We must bear in mind that the rise and fall of the tide there is very small, being identical with that of another pestilential and death-dealing center. I refer to Colon, the Atlantic city of the Isthmus of Panama, a city whose conditions I described at length in the last biennial report of the Board of Health of the State of California. (Refer to my article on "Yellow Fever in its Relation to the State of California.")

The piers along that waterfront are wooden. Where seawalls exist, they are of the soft, porous coralline stone already described, the whole eminently fitted to entangle, retain, and foster low forms of vegetable life and the germs of disease. I say germs of disease.

We walked along past huge sugar warehouses, Spanish gunboats, and shipping of all nations, towards the city. If the waters are foul at the upper horn, where the warehouses are, you can fancy what they are just near the narrow entrance to the harbor, where drains pour in their reeking contents directly amid and under the very bows of the ships as they lie stem on at the piers. They lie stem on for want of room. A large fish market contributes its due share of filth. Literally, "it smells unto Heaven."

The City of Havana has a population estimated at two hundred and four thousand. It is but partly drained. Old-time privies and cesspools poison the air and soak the earth with fecal poisons. Its whole subsoil is contaminated. When in Havana, in November of the year previous, I purposely visited the docks near La Machina, in the vicinity of the Custom House, where the entrance to the harbor is narrow, and where the vessels for want of space lie side by side, as already stated. There I noticed that in the dirty waters occasional bubbles arose to the surface to discharge their foul gasses, telling of fermentation far below. In the very thick of this sewage the vessels and the sailing ships are found. In them yellow fever makes constant ravages at all seasons of the year, particularly in the hot months. We owe much to commerce and rapid transit. We are also indebted to it for epidemics of yellow fever. With proper sanitary precautions the Southern United States would be free from all future epidemics of yellow jack. But will they be? I doubt it. Why? Because "corporations have no souls to damn and no backs to kick," and because mankind is selfish and grasping in the search for riches.

The entrance to the harbor of Havana requires special mention. To place this word-sketch before you clearly, let me give full details. The entrance to the harbor may be six hundred feet across. The harbor may be described as a small inland salt lake, perhaps a mile and a half or two miles long, by three fourths of a mile across in its broadest part. The entrance to the harbor is guarded by the old-time historic fortifications called El Morro. Just opposite, or across the entrance, are other fortifications, covered with huge siege guns, on the city side. Remember, the narrow, gatelike entrance, a mere water lane, and beyond the harbor, receiving all the filth and sewage mentioned. As one would expect, who has traveled in the West Indies, Mexico, Central and South America, and Havana, owing to the old-time closets, want of drainage, subsoil contaminations, etc., the city is a disease-producing and distributing center; the air in certain sections reeks with the vile fecal odor so familiar to all travelers in Spanish-American cities within the tropics. Huge street gratings ventilate the few drains, and the reeking odors almost stifle one in the crowded centers. These drains are never flushed except by the heavy rains, and if flushed would only empty their fermenting contents into the bay below.

A mere reference to fecal fermentation within the tropics, to all students of disease is ample, without entering into specific details. I may add *inter alia* that there are some students of yellow fever who believe—and undoubtedly their belief is a just one—that the fecal matter from all such yellow fever patients is as essentially dangerous as are the stools from typhoid patients.

The point I wish to make, and impress upon my readers, is this: That the poison of yellow fever is just as much a part and parcel of the City of Havana, as the houses and churches of New York are a part of that noble city. I make bold to state that the yellow fever poison is as much an article of export from that island as are its famous cigars. While the harbor is foul and dangerous, the city is the habitat of yellow jack.

So much for my reflections, hurriedly jotted down in pencil, on the steamer "Hutchinson," amid passengers and squalling children, and now rapidly dictated to a stenographer.

There is one fact to be borne in mind in connection with this subject of yellow fever, and it is this: the constant war by steamship agents and railroad men against all medical men who have the courage of their opinions, and dare to tell the truth. Alas, they duly recognize the value of Sidney Smith's old truism, "Corporations have no souls to damn, and no backs to kick;" and while they are endeavoring, as they are in duty bound to do, to warn their fellowmen, to protect themselves against this dread disease, steamship agents, officers, etc., are bulldozing Consuls and doctors to obtain clean bills of health. *They lie fluently and ably, because they are paid to do so.* But when, through their criminal action, disease has been grafted on a port, they flee, and medical men are left to face the danger.

In concluding this somewhat lengthy article, it does seem to me, as a student of this awful disease, that if people wish to suicide, they should have their own way: but that they should be allowed to sell their products, and ship their disease to other countries, is manifestly a gross injustice to their fellowmen, *and an insult to sanitary science.*

A time may be coming when international law will grasp this huge problem, and say to calloused countries like Spain: "If you are willing to have your subjects swept away by yellow fever, as a direct result of your gross and criminal carelessness, well and good: but you shall not trade with me, and expose me and mine to epidemics of yellow fever, as you are doing, as you have done, and as you will do, to the end of all time, if left to your own devices."

THE PRESENT TENDENCY TO EPIDEMICS.

By WOLFRED NELSON, C.M., M.D., member of the College of Physicians and Surgeons, Province of Quebec, Canada; late of State Board of Health, Panama, South America; Correspondent State Board of Health, California, etc.

In August, 1886, while in the City of Mobile, Alabama, I wrote thus: "What significance has the present tendency of disease to take on epidemic character?"* That question was asked at the time, when a vessel from Colon had made the mouth of the Mississippi with yellow fever on board. She was ordered to Ship Island.

I also wrote: "The value of quarantine is fitly illustrated by the following from the 'Telegram,' of Mobile, of date August 21, 1886: 'During the present month some six or eight ships have arrived at Ship Island quarantine station, which either contained members of the crew sick with yellow fever or had lost men on the passage from Colon by that disease. By carefully isolating the quarantine station from the mainland, and keeping all communications closed, the physician in charge has prevented any spread of the disease. These cases were undoubtedly yellow fever of a virulent type—the type of the Isthmus of Panama—and the confinement of the disease to the station is one more evidence of the benefits of a strict quarantine, remote from crowded communities. Had these ships been allowed to come up the Mississippi to New Orleans, there is every reason to believe that ere this, with so many cases of possible sources of contagion, an epidemic would have developed. As it is, New Orleans and the entire coast is enjoying excellent health, and the yellow fever at quarantine is disappearing gradually with the convalescence of the patients.'"+

Again, to quote from the same source, page 239, apropos of the above: "Acting Surgeon-General Stone, of the Marine Hospital, Washington, in his recent report of the nineteenth of August, referred to the vessels now in quarantine, and said there was no danger of the disease spreading." *And there is none if the isolation is real and absolute.*

The words in italics are my own, and will be found in the paragraph quoted from that report. Now, then, what resulted? To condense an immense amount of published matter, I may state that the isolation was not *real*; neither was the quarantine *absolute*. Boats did pass between the shore and the vessels, and the result was an outbreak of yellow fever in the town of Biloxi, Mississippi. Biloxi is one of the coast towns. I was in the State of Louisiana at the time, and was present at several meetings of the Board of Health, called in the City of New Orleans to consider that very outbreak. That it was yellow fever was most emphatically denied by doctors of great and no repute at all. Still the people sickened and died, and but for the energetic and most effective measures instituted by the Board of Health of the State of Louisiana, the disease would not have been encircled and stamped out as it was. Dr. Joseph Holt visited Biloxi, and, thanks to him, the disease did not reach New Orleans.

As usual, ignorant and untruthful physicians were haggling as to what it was, while people were sickening and dying. Between that outbreak in

* See Ninth Biennial Report, State Board of Health of California, 1886, page 229.

+ See Ninth Biennial Report, State Board of Health of California, 1886, page 228.

September and October the seventeenth, or in a little over five weeks, over three hundred cases of fever were reported, with a total of eighteen deaths from all causes. Many of the cases were true specific yellow fever, properly so called. I make this statement upon the authority of gentlemen well versed in yellow fever, whose diagnosis was positive, and it was confirmed in several cases by black vomit, were confirmation necessary.

Now, to repeat, if there is one thing well known to the merest tyro in yellow fever it is that yellow fever never has appeared in any spot, city, or on board ship but that the disease has been traced to an infected individual or infected clothing; in short, that there was an absolute introduction of the specific poison of yellow fever.

The quarantine that existed at Ship Island, Mississippi, was but a quarantine in name. Had it been real, efficient, effective, the disease would never have been taken from those infected vessels into the town of Biloxi, and have led to the circumscribed epidemic already referred to.

Again, dwelling upon the present tendency to epidemics, I shall refer to the epidemic of yellow fever in Key West, Florida, in 1887. In my article, under the title of "Cuba as a Disease Producing and Distributing Center," that appears in this issue, a reference will be found to Key West and its immediate proximity to the early home of yellow jack, I mean the City of Havana. During the summer of last year yellow fever swept Key West, killing a number of citizens and causing the direst consternation. Hundreds fled, leaving in any sort of a craft capable of conveying them to the mainland. The course of the disease there was just what one would expect who is familiar with it; it exhausted itself and then became quiescent. I repeat, quiescent.

After leaving Tampa, Florida, early in December of last year, I paid Key West a flying visit and gathered some information regarding the history of that epidemic. I learned that it had been directly traced to a lot of bedding, and that said bedding had been used in a boarding-house in the City of Havana, and that there had been a death in that boarding-house from yellow fever. Later, its proprietor left Havana for Key West, taking her bedding and furniture with her. In her new home a case of yellow fever appeared. It needed but a spark, the magazine was full, and there was an explosion of the disease. The linking of cause and effect, in this simple way, emphasizes my early statement—in fact, not mine, but that of all students of yellow fever—that all cases and all epidemics of that dreadful disease can be traced to patients or fomites.

At a later period during the summer, after Key West had had her experience, a case of yellow fever appeared in Tampa. It was during the absence of my friend Dr. John Wall, the President of the Board of Health of Tampa. My readers will not be surprised to learn that an earnest effort was made to hush the matter up, and suppress all information. Interested parties lied, as interested parties generally do under like circumstances. Later more cases appeared, when it transpired that a smuggling schooner had brought the disease in from Havana. One case simply led to others, and when Dr. Wall got back he found a number of typical cases of yellow fever. As a profound student of the disease, and as a truthful and honorable physician, he grasped the gravity of the situation, and, seeking the greatest good for the greatest number, ordered all to leave who could get away; and to his care, prudence, and foresight hundreds to-day probably owe their lives.

Soon there was the usual explosion of the disease, when it took on epidemic proportions. I reached Tampa late in November. I visited it purposely to see what yellow fever in the Southern United States was like,

and to compare it with what I knew of yellow fever within the tropics. Thanks to my friend Dr. Wall, I saw case after case in the city and suburbs of Tampa, and, thanks to the courtesy of my friend Dr. J. Y. Porter, President of the Board of Health of Key West, Florida, then in charge of the yellow fever hospital at Tampa, I saw his patients and the notes he had taken on their cases. In short, during my brief visit to Tampa, I had every facility given me for seeing things exactly as they existed. I asked my own questions, obtained my own information, examined patients one by one, and obtained all the knowledge that I wanted regarding the nature of the disease in that city.

Despite the fact that yellow fever had swept the city, that dozens had died—the majority with black vomit—still there were those who questioned the knowledge and accuracy of the diagnosis made by Drs. Wall and Porter, and such was the bitterness against Dr. Wall for his truthful course, that I wrote a letter to the "Times-Union," of Jacksonville, indorsing all that they had said regarding the disease, and stating that it was yellow fever, properly so called. I also warned the people of Florida against "what assuredly awaits them next year." That letter appeared November 30, 1887. Now this may seem a remarkable statement, that a foreigner should deem it necessary, in the interest of the exact truth, to come out in the local press to indorse the statements of two well known professional men, whose position socially and professionally is of the highest; but it simply illustrates what willful ignorance and "the cursed love of gold" will lead conscienceless individuals to do—I mean a contemptible war upon truthful physicians, who staid in the field and fought the enemy while their cowardly accusers fled the field. In Tampa I saw and noted the condition of the city, its surroundings, the elevated temperature, and felt sure that the disease would be kept alive during their winter, so called—Tampa is below the frost line. Owing to the panic and fear, the houses had not been disinfected, and the stoves in them would keep up the necessary temperature to keep the germs alive awaiting the return of the summer days, when they would again be ready to continue their deadly mission. This summer there are many cases at Plant City, a few miles from Tampa. Cases were reported at Manatee. Local physicians denied that they were yellow fever and roundly abused Dr. Wall. After there had been seven cases he was sent for, and as he stood by the side of a woman dying of specific yellow fever, even then a physician questioned its being yellow fever. Later, when there had been more cases, they reluctantly admitted that Dr. Wall was right. In Plant City such was the feeling against Dr. Wall that he was burnt in effigy, and threats and no peace were his portion. Later they reluctantly admitted his wisdom.

On the third instant (August, 1888,) I left Havana per steamship "Mascotte," for Key West and Tampa. In Key West I saw Dr. Porter, and in Tampa Dr. Wall, when we discussed the situation freely. I then went on to Jacksonville, and learned from my friend Dr. Neal Mitchell, the President of the Board of Health of that city, that some days previous to my arrival there had been a suspicious case of sickness at the Grand Union Hotel, in that city. The patient was not his, but owing to the presence of yellow fever in South Florida, the hotel people became suspicious and sent for him. Dr. Porter was then on a visit to Jacksonville, and together they saw the case. It was pronounced yellow fever. The man was removed to the hospital at the sand hills, outside of the City of Jacksonville. Later other cases followed, and, as I had predicted, it took on epidemic form, and in that form it is prevailing to-day (August thirtieth).

In the "Evening World" of New York, of this date, I find the following.

being a telegram from Jacksonville of even date: "The temperature for the past forty-eight hours has ranged 93 to 97 degrees, and thirty-four new cases of the fever were reported last night with four deaths. This swelled the number of cases to one hundred and sixty-four, and the number of deaths to twenty-three."

What will happen between this and frost I do not care to predict, further than to state that if the month of September continues as hot as the weather they are having, in that month the disease will show its greatest activity.

Let us suppose the present epidemic over. If it corresponds with epidemics that I have studied in Cuba, in Mexico, as well as on the Isthmus, during next year, 1889, there will be a few cases in the City of Jacksonville. I say a few cases, but if the people who are at present outside, flock back into that city, it goes without saying that the disease will be true to its traditions dating back four centuries, and will do its work. Such, generally, is the history of yellow fever following an epidemic, and the peculiar danger that I wish to refer to is this: That if the disease appears next year in Jacksonville, and appears early, it may spread to other southern centers and develop new epidemics. Time will flatly contradict this forecast or emphasize it. If the precautions are taken that science dictates under such circumstances, the disease may be kept in the State of Florida and not devastate the South. Let us bear in mind how the disease was encircled at Biloxi, and stamped out in the fall of 1886.

My travels during the past winter simply confirm my views as to the present tendency to epidemics. I may state that I have been on the Spanish main, in the United States of Colombia, and in Venezuela: thence to the Island of Trinidad, thence to Barbadoes, thence to St. Thomas, thence to Porto Rico, thence to Santa Domingo and Hayti, to Jamaica, and on to Cuba. In all the places named, the heat and seasons have been very irregular. On the Isthmus of Panama there was the usual smallpox and yellow fever. The heat in Venezuela was almost unbearable; it was likewise very hot in Trinidad; and in Barbadoes, just previous to my reaching the City of Bridgetown, two creoles by birth, one of whom had never been off that island, had died of yellow fever—simply another proof of my oft repeated statement, that the only protection against yellow fever is to have experienced it.

Ere coming on to this city (New York), I spent two months in the Island of Cuba—a greater part of the time in the old City of Santiago de Cuba, nearly three centuries old. The season on the island was very irregular—excessive heat, want of rain, parched hills and fields, scarcity of water, etc.; in short, the conditions that precede and accompany epidemics were there, and the island was and is full of yellow fever, together with a great deal of smallpox. It has been noted time and again that smallpox and yellow fever pursue their course at the same time: again, one follows the other. In other words, such atmospheric conditions favor any epidemic.

Many Cuban physicians call yellow fever in the children of creoles *boras*, naming it after the grumous vomit. I can only repeat here what I have stated in another paper in this work, that acclimation is an old time and worn out myth; nothing protects against yellow fever excepting having had the disease, and by not losing the protection that it gives by long residence in cold climates. I mean, that to enjoy the full protection given one after recovering from yellow fever, properly so called, he or she must keep within the yellow fever zone: and, apropos of this statement, I may add that I have yet to meet any student of yellow fever who has seen a secondary case, properly so called. That it is possible to have it again when the protection is exhausted, no doubt is true, as we had secondary cases of

smallpox: but, unlike secondary cases of smallpox, I never have met a physician who could report a death: in fact, to repeat, I never have met a physician who has seen a true case of secondary yellow fever, and I have yet to read that a second attack, when it does occur, kills. Mind you, I mean yellow fever properly so called—*the disease with the usual symptoms and the invariable presence of albumen in the urine*. This statement explains itself to all students of yellow fever. In the localities where I became familiar with the disease, albumen is a *sine qua non*, and no case ever was diagnosed as yellow fever unless it was present combined with all the usual symptoms. I make this statement, as in many cases in the Southern United States, where there is a flushed face and twenty-four or thirty-eight hours, febrile movement, with a rapid pulse, without albumen, are called yellow fever. These, I believe, are the people who often claim they have had yellow fever twice. A crucial investigation of such cases will convince any tropical student of the disease, that such people did not have yellow fever as it is understood at Panama, Colon, Mazatlan, Porto Rico, or in the Island of Cuba. If they had had specific yellow fever, they never would have had it again.

We are in search of the truth, the only and real end of all inquiry, be it scientific or medical. Here I must draw this report to a close. If my readers feel disposed to find fault with any want of smoothness in this hastily written report, I crave their indulgence, and say, that the four reports sent forward to my friend Dr. Tyrrell have been dictated to a stenographer during four successive evenings, following long and busy days.

In conclusion, I wish to state that to rapid transit and want of the necessary quarantine regulations, both at Key West, Florida, and Tampa, Florida, both have suffered from yellow fever. At Tampa and Plant City the disease, as has been shown, hibernated during the past winter, and this year caused Tampa but little trouble, for reasons already given. It swept Plant City and now there have been many cases at Manatee.

Jacksonville owes her present epidemic to a man named McCormick, who forced his way into Plant City, returned to Tampa unobserved, got into a through sleeper that runs between Tampa and Jersey City, about August first, and went on to Jacksonville. The man was sick when he got into his section in that sleeper. His is the case already referred to, as having been found in the Grand Union Hotel.

The Jacksonville Board of Health, under Dr. Neal Mitchell, is making a magnificent fight, *but the disease has obtained a firm foothold, and despite the firing of cannon, prayers, or incense, it will go on*.

I do not wish my confreres to consider me a medical alarmist, but I want such of them as are interested in the welfare of their fellowmen, and who are earnest in their search for the exact truth, and the greatest good for the greatest number, to think carefully of what I have written, and perhaps they and others, combined with the press, may bring about measures that in the future will rob yellow jack of its terrors, and free the South from this terrible visitant that has cost her tens of thousands of lives and millions of damage.

If there is a disease known to the profession to-day that can be manacled, confined, or hemmed in by quarantine, it is yellow fever.

God grant that a time may be near at hand when those high in authority will recognize their great responsibility, and free this great republic from the reproach of yellow fever.

THE ISTHMUS OF PANAMA CONSIDERED AS A DISEASE PRODUCING AND DISTRIBUTING CENTER.

By WOLFRED NELSON, C.M., M.D., member of the College of Physicians and Surgeons, Province of Quebec, Canada; late of State Board of Health, Panama, South America; Correspondent State Board of Health, California, etc.

In the ninth biennial report of the Board of Health of the State of California, in a lengthy article under the heading "Yellow Fever Considered in its Relation to the State of California," I dwelt upon the peculiar methods that had obtained in the Panama cemeteries in times past. I referred to the old time Colombian custom of unburying the dead year by year, and digging over the small cemetery at Panama. I emphasized the danger of liberating untold millions of germs of smallpox and yellow fever under tropical conditions, where they would naturally take on new and death-dealing powers, not only leading to local outbreaks, but, owing to the fact that Panama is the gate to the Pacific, that these criminal methods (for I can call them nothing else) endanger all trading with the Isthmus, either on its Pacific side or on its Atlantic seaboard.

During March and April of this year (1888), I visited my old hunting grounds, and had a thoroughly good look at everything on both sides of the Isthmus. On the Panama side I visited the cemetery, that was opened during the summer of 1884 with inaugural addresses and a band of music.

Colombians are eminently fond of giving concessions; thus one man has a concession for selling opium, another man has an exclusive concession for all the gambling hells on the isthmus, a third holds a concession for a lottery, and last, but not least, the *omnium gatherum*, Señor Don Nicanor Obarrio, holds a Government concession for the burial of the dead. This may seem an extraordinary statement to make in this enlightened age, but it is so. No burial can take place in the Panama cemeteries without paying a fee of \$5 to Mr. Obarrio, he having the exclusive concession from the Federal Government of the United States of Colombia. This is a mere prefatory statement, but explains what will follow.

In July, 1884, the new cemetery, with its *bovedas* sections, was opened. The *bovedas* of the isthmus are those met with in the Spanish West Indies, in Spanish America, etc. They have been handed down from the time of the Spaniards. They are immense masses of masonry, built in tiers of openings or niches three stories high. By this I mean that you have a ground row of niches, each niche being a receptacle for a single coffin. Then there is a second row, and a third or topmost row, the whole built of masonry. Mr. Obarrio's concession naturally includes this, the ultra fashionable section of the Panama cemetery. Now to explain its *modus operandi*.

We will say that Fulano de Tal has been gathered to his fathers. Having dispensed with his medical friends, he is received by Mr. Obarrio and placed in one of these niches, the entrance to which may be closed either by brickwork or with a plain marble slab, with the usual inscriptions. Eighteen months' rent for this niche is paid in advance, a few, very few, becoming permanent settlers. At the end of the eighteen months, failing a renewal of the rent, Fulano de Tal is evicted, or, in other words, goes to

to the bone heap. Back of the old section of *boredas*, in the old cemetery, I once counted coffins, more or less intact, seven and twenty in number. It was a sight even to a medical man. I can perfectly recall to memory seeing in one what had been the form of a woman with a magnificent head of hair, the remains of high heeled boots, and the paraphernalia belonging to people of upper tondom. These literal outcasts of society had been evicted owing to the fact that their friends had neglected to pay another eighteen months' rent, and, as the Concessionaire had attended to business on business principles, their places were wanted. I need not dwell upon the great danger of this shameful style of procedure. I refer to the distribution of disease anew.

Having temporarily disposed of the *boredas* sections, we will now briefly consider the ordinary burial ground. Mr. Obarrio, who is always equal to the emergency, has grave diggers constantly opening series of new graves in some instances, and disinterring the temporary tenants in others. I am dealing with this matter in all seriousness, and it is simply another illustration of the fact that the truth is stranger than fiction, and that the horrible sights to be witnessed in the Panama cemeteries, or back of them, seldom get into print. During that visit to Panama I went out to the cemetery one morning, and took my traveling camera with me. I wished to obtain a series of views of the absolute condition of things, because they were so extraordinary, that I could not even expect my old intimate friends to accept the extraordinary statements that will follow without them. The cemetery that was opened in 1884 had been filled when I revisited the isthmus in 1886, and a part of a large field back of it was partly filled with new made graves. Speaking from memory, the highest number that I noted in the field, back of the cemetery proper, was 3,884 (refer to April, 1886). The graves that we are now considering mark the temporary abiding place of the middle classes, hospital patients, and the poor of Panama. A simple black cross on the upper portion of its vertical section, the year is painted in white figures—for instance, 1886, on the transverse section, or arm, the number of the grave, let us say 3,884, this number corresponding with the number kept in the books of Mr. Obarrio. So much for this simple way of burial. It will be but correct to state that there are a few tombstones in the cemetery, a very few private lots, but they are for permanent settlers. When I was on the isthmus, in 1886, they had not commenced digging up the new cemetery—I mean eviction, *a la Colombie*—but when I got there this year I found that the new cemetery had been dug up entire; that all the numbers were doubled, and that upwards of one third of the field back of the old cemetery had been dug over.

Now, to try to make my meaning clear. I have before me a photograph, and in the foreground is a grave bearing the number "3,059" on the crosspiece, "1886" above it, and below the word "perpetual." This is an exception to the rule, and for this reason I cite it. Back of it, where I made my photograph, I saw nothing but a line of black crosses, with numbers expressed thus: "3,025," "3,024," etc. Let us consider 3,024. Above that we have 1886, and below, on the same cross, 1888, the meaning of which is this, that the tenant of 1886 had been evicted, and a new tenant was introduced in 1888. Thus the same cross can be used time and time again, and it goes without saying that the last date represents the last tenant, or 3,024 of 1888.

To talk about a business in second hand coffins seems a bold statement to make, and, one would fancy, an exceedingly difficult one to prove; but such is not the case, for back of the stone wall, in the cemetery proper, there was a row of coffins that had been taken out of those graves—for the

most part common wooden coffins—placed there for sale. I do not enter into these details with a view of drawing a harrowing picture. I simply look at them from the standard of the sanitarian, and dwell upon them at length to point out this shameful and most criminal of practices of disinterring bodies by the thousands—not by the hundreds, by the thousands—having in view all the while that hundreds of these bodies, or the ashes that have been turned out under that tropical sun, amid all the receptive conditions that make disease an all-powerful agent—that hundreds of these were victims that died of yellow fever and smallpox. While a resident practitioner in Panama, together with the late Mr. John Stiven, we denounced the old cemetery, in the “Star and Herald,” and the barbaric customs that had obtained for over half a century. Our denunciation was so pointed and strong, in the plainest of English and the most pointed of Spanish, that the Government stopped the vile practice, and for some years there was a little apparent decency and respect towards the dead. But, as will be gathered from the foregoing remarks, that period of respectability has passed over. Mr. Obarrio, the Concessionaire, found it easier to disinter the dead than to have his men break into the virgin soil in that vicinity. Not that it has any more value, for it has not, but it saved time and added immensely to his profits. As a direct result of the disinterring of the dead in the new cemetery, or what remained of them, the isthmus was visited by two epidemics of smallpox, and yellow fever is as much a part and parcel of the City of Panama and the City of Colon as it is a part of the City of Havana, already referred to in another paper. If the Colombians are satisfied to die, as the result of their own carelessness, so be it, but let them die without endangering others.

But for the fact that Panama and Colon are on the highway connecting two vast oceans, that tens of thousands of passengers and hundreds of thousands of tons of freight cross from ocean to ocean, and are distributed up and down the west coast of South America, the west coast of Central America, Mexico, and California, while much of it is shipped from San Francisco to Asiatic ports, and that Pacific cargoes passing from Panama to Colon are distributed all through the West Indian Islands, England, the Continent, and United States: but for this fact that the criminal practices now obtaining on the isthmus endanger each and all of these countries, we might be satisfied to allow the Colombians to die in their own way. No fact is better known to students of yellow fever—for there is a wealth of literature on the subject—than this: That yellow fever was taken to the Isthmus of Panama in the earliest times. It raged on the isthmus, it crossed it, and it was distributed up and down the west coast of South America, Central America, and Mexico. Yellow fever thus is permanently domiciled on the west coast of South America. It swept the western coast of Mexico as an epidemic, and dealt its commerce a blow from which it has not recovered; and, quite apart from that, it has established itself in endemic form.

All that precedes, I trust, will be sufficiently suggestive to thoughtful men, and this article is simply written for them and sanitarians, that they may grasp the indescribable dangers that the unburial of the dead on the isthmus causes. We can picture to ourselves the crossing of hundreds of thousands of packages, goods from Europe and from American ports crossing the isthmus to be handed over, on the one hand, to the steamers of the Pacific Navigation Company, plying south, to the steamers of the Pacific Mail Steamship Company, plying between Central America, Mexico, and California; and on the other hand we can see the hundreds of thousands of packages of coffee passing from Panama to Colon, to be distributed

to ports in Europe, in the West Indies, and the United States. The man who has the courage to come forward and say that these things are not bearers of disease will be unwise in his generation, and show a lamentable ignorance in this advanced era of sanitary science.

Such is the exact condition of things on the Isthmus of Panama. It goes on, and it will go on, and the great outside world knows little of it, and no doubt hears less. Let us ask, on the other hand, what the isthmus has done in the shape of distributing disease. We have already shown that she has domiciled yellow fever on the west coast of Central America, Mexico, and South America. The late epidemic of smallpox that swept the Island of Jamaica came from the isthmus. There were upwards of eight hundred deaths in the Island of Jamaica. Next we have the disease appearing in the Island of Cuba, where, inside of twelve months, it had rolled up the fearful mortality of six thousand victims—I mean up to February, 1888. The old historic City of Santiago de Cuba, about ninety-four miles from Kingston, the capital of Jamaica, lost upwards of one thousand lives within a twelvemonth. It is thus that irresponsible Governments and conscienceless officials distribute pestilence and death in their headlong race for money and trade.

As I have stated in another article that appears in this report, we are indebted to commerce for much, and we are also indebted to it for the rapid distribution of disease, and for epidemic after epidemic. A word right here to those senseless writers who are constantly abusing quarantine measures and the other safeguards that common prudence and science have placed around nations, as well as cities. During the past winter I made two visits to the Island of St. Thomas, West Indies. All who are familiar with the history of the West Indies, and who may have read Trollop's "West Indies and Spanish Main," are aware of the fact that St. Thomas, in times past, was a by-word. She was swept by epidemic after epidemic. First cholera, next smallpox, next yellow fever. Her name was a by-word and reproach, and deservedly so. But what is her condition to-day? Denmark, the mother country, having noted the disrepute into which that island had fallen, adopted quarantine measures, and the result briefly stated is as follows: Owing to the vigilance of her quarantine officers there has been no yellow fever in that island for years, and not a trace of smallpox, and that despite epidemics all around her, and its past reputation of being one of the most insalubrious ports in the West Indies has gone. To-day that island is clean, healthful, and pleasant to visit, and I know of no point in the West Indies where strict quarantine measures have been attended with such perfect results. I make this statement *inter alia*, with a view of silencing writers who are opposed to quarantine, and who, in opposing measures adopted for the general good, are making themselves the creatures of those corporations that "have no souls to damn and no backs to kick:" and, in a measure, these men undoubtedly are responsible for the propagation of disease and death.

If there is one thing that is well known to even the merest tyro in yellow fever, it is the fact that never has a case appeared in any port, or on any ship, or in any quarter, but that the disease has been taken there by an infected individual, or by infected clothing, or by an infected vessel. And for those who wish to verify this point, I would recommend them to read the excellent article in "Ziemsen's Encyclopædia," Vol. II, on yellow fever, and to refer them to the more recent and most excellent literature on the subject, published by a number of able French writers on yellow fever. They are the best authorities to-day.

Thanks to the kindness of my old and valued friend, Dr. Gerrard George

Tyrrell, Secretary of the State Board of Health of California, I am enabled to place my views before many readers. In common with him and many sanitarians, I am only anxious "for the greatest good for the greatest number," and hope by a persistent pointing out of this vile, indecent, and criminal practice, that the attention of Governments may be drawn to these irresponsible republics, and that they may be made to do what is right. In Europe, if a small State or country becomes "troublesome," the great powers say, "you must be quiet." Surely the time has arrived when nations, respecting their own rights and the lives of their own people, shall say to irresponsible republics like Colombia: "If you deal with us you must conform to the prescribed usages of civilization. You want our money for your goods; well and good, we will do business with you, but we will not accept the results of your criminal carelessness and introduce epidemics."

Now for a concluding paragraph, and it is one that I should like to have health authorities engrave on their mental tablets. It is this: It is customary with certain foreign Consuls at Colon and Panama to grant clean bills of health all the year round. I am happy to state that there are a few gentlemen speaking English on both sides of the isthmus, who have the courage of their opinions and cite the fact that yellow fever is there always, and if it were necessary to indorse their statements I shall here quote from a letter from Dr. Quijano Wallace, President of the Board of Health of the State of Panama. The letter that I refer to, was written on the thirteenth day of October, 1882, to Dr. Joseph Jones, then President of the Board of Health of the State of Louisiana. The paragraph translated into English, reads thus: "The actual sanitary condition of the ports of Panama and Colon is, generally speaking, good, as there does not prevail at present any of the usual epidemic diseases, it being a well known fact that smallpox, yellow fever, and the malarial fevers in their numerous varieties and forms, are never missing in these intertropical regions, where they are truly endemic."

If this paper is read in connection with that on Cuba as a disease producing and distributing center, it probably will throw additional light on this subject.

THE HOLT SYSTEM OF MARITIME SANITATION, OR AN IDEAL QUARANTINE.

By WOLFERD NELSON, C.M., M.D., member College of Physicians and Surgeons, Province of Quebec, Canada; late of State Board of Health, Panama, South America; Correspondent State Board of Health, California, etc.

In August, 1886, during a visit to the Southern States, I, through the courtesy of Dr. Joseph Holt, the President of the Board of Health of the State of Louisiana, visited the quarantine station on the Mississippi. Thanks to the courtesy of Dr. Thomas Y. Aby and his assistant, Dr. Ryan, I had every facility given me for seeing the exact working of that most admirable system—a system built up and developed from point to point under the able guidance of Dr. Holt. It was my intention to have written a report on that quarantine system for the last issue of the biennial report of the Board of Health of the State of California; but, having stayed some time in the South during great heat and moisture, it resulted in a severe bilious, remittent fever, and instead of sending the report on for publication, I became intimately acquainted with a private ward in St. Luke's Hospital, Jacksonville.

Between that date and this, fire has destroyed the quarantine station as I knew it in 1866. Last year, on my return from Cuba, per steamship "Hutchinson," I, together with all of her passengers, went through the whole process. While the fire undoubtedly upset the plans of the Board for the time being, the result as a whole, I take the liberty of thinking, has been undoubtedly beneficial, as the building used to-day is a substantial one, made of brick, whereas the earlier edifice was built of wood.

I will now endeavor to give you a word picture of what happened to the steamship "Hutchinson" and her passengers upon reaching the upper quarantine. The passengers and their luggage were disembarked. They walked along the pier to the building referred to. One room was allotted to the women and another to the men. Their trunks were opened and their contents taken out and placed upon movable frames that ran into a steam-tight chest of huge proportions. All of the effects were arranged on supporting bars inside what I take the liberty of calling a steam chest, the various sections of which had checks fastened on them externally, and a check corresponding with that number was given to the individual whose effects were on a given series of shelves or supports constituting a vertical section within the steam chest. Such, briefly told, was the way in which our effects were taken and placed within that steam chest.

Now, to deal with what followed. Within that steam chest were steam coils without number, for dry steam and for moist steam. The temperature ran up immediately to 230, a point at which, as all students of bacteriology are aware, germs and spores are killed. Later the compartment was filled with moist steam; thus the effects were first baked at a temperature of 230; then they were saturated with live steam at a temperature of about 230, and were allowed to remain within the chamber upwards of half an hour. At the end of that time the long, sliding vertical sections were drawn out, and the individuals received their effects, piping hot, but wholly undamaged. It will be well to add, at this point, that the finest

silks have been treated in this way without the slightest damage. While this process of killing germs, or any morbid particles, that might have become entangled in our effects while in Cuba, was going on, many of the coarser things, which could not be placed within the huge steam chamber, such as boots, shoes, rubber goods, etc., were thoroughly drenched with a solution of mercuric bichloride.

It will be but just to state that this excellent application of mercuric bichloride was first thought out and applied by Dr. Joseph Holt.

So much for the effects of the passengers and their luggage. Next let us get back to the steamer. While we had been absent a steam tug had been fastened to her starboard quarter, and a huge asbestos pipe had been adjusted to an opening in the main hatch. This pipe connected with a large furnace, in which sixteen pans were filled with burning brimstone. A current of air from without inwards was passing through the furnace, and the sulphurous acid gas thus generated was driven by a powerful steam pump through the asbestos pipe into the lower holds and all parts of the vessel. I may briefly cover this important section of the work by stating that it is most thorough and effective—so effective that all mice, rats, and cockroaches are killed. Time and again unfortunate cats that have been left on board have been killed. Thousands of feet of sulphurous acid gas are thus forced into all parts of the vessel under high pressure. The hatches are on, and the gas is confined for upward of two hours. All who are familiar with this most admirable of disinfectants and germicides know what a penetrating and all powerful agent it is.

I may state that vessels reaching the Mississippi, coffee-laden from Brazilian ports, have special shafts placed from the combing of the upper hatchway and extending to the floor of the lower hold, when such vessels reach the quarantine station. I saw one (the "Maranhão") with a cargo of twenty thousand sacks, treated at the old quarantine station in the fall of 1886. Six hours was ample—a mere minimum of detention.

The decks and all parts of the ship are thoroughly washed with a solution of mercuric chloride, which the assistants spray over everything.

I have omitted to state that all the dirty linen from the ship, and everything of that nature, was taken on shore and thoroughly treated, so that it is simply impossible for any infected material to reach the City of New Orleans.

The mercuric solution used for the purpose of drenching the decks, disinfecting the bilges, etc., is kept in a huge tank at the end of the pier, a tank holding some ten thousand gallons. The steam tug has been fitted with all the necessary appliances—appliances that have been elaborated from point to point by necessity combined with experience. In the able hands of Dr. Holt and his assistant, they have evolved the most perfect system of maritime sanitation known to science or the world. As Dr. Holt stands *in loco parentis* to this system, I have taken the liberty of dubbing it "The Holt System." His it is, and his should be the honor.

Such, briefly told, is the expeditious working at the upper quarantine. I do not enter into details as to the boiler-room, the steam boiler, specially constructed, or the methods by which the steam chamber is supplied with live steam, and with dry heat. These I do not deal with; I simply deal with the results.

The passengers are not allowed to leave the quarantine station.

Among the passengers with me on the steamship "Hutchinson," on that trip from Havana, was Dr. J. W. Ekins, a gentleman already alluded to in another article in this report. We were greatly pleased with all we saw, but thought we discovered a weak point, in that the clothing worn by the

passengers themselves was not taken from them and disinfected, in the same manner as obtains in England when contagion or infection is likely to be carried about. Upon reaching New Orleans, and during a pleasant interview with Dr. Holt, we took the liberty of making this suggestion, when the system would be perfect in every detail. Dr. Holt received our suggestions in the frank and open way characteristic of that gentleman, and the day following he telegraphed the quarantine station that on and after that date all passengers should be supplied with a suit of their clothing that had been thoroughly disinfected, and that the suit that they had worn should be taken from them and put through the process of the steam chamber.

The exact beauty of the Holt system, briefly stated, is this: All germ life and spores are first and finally disposed of; secondly, cargoes are handled expeditiously at a minimum expense; thirdly, absolute protection is granted the City of New Orleans; and ship masters and passengers suffer but small delay, six hours to eighteen hours being ample for the purpose; and after the vessel clears from the upper quarantine for the Crescent City, she is sweet, safe, and healthy, and the State authorities know that vessels that have undergone this most crucial of treatments are not carriers of disease; they cannot be.

Now, to revert to some other phases of the quarantine system, as developed by Dr. Holt. On reaching the mouths of the Mississippi, the vessel is boarded by a medical man in the employ of the Board of Health. He makes a crucial inspection to see if there are any cases of infectious or contagious disease on board. If the vessel is clean, and there are no cases of disease, she receives permission to proceed to the upper quarantine, where all the steps already described follow. On the other hand, if there are cases of yellow fever or smallpox on board, she passes up the river a given distance and into an inlet, where the necessary steps are taken to disinfect her in the most thorough manner; her patients are placed in a small hospital, if necessary, and the vessel may be detained from four to six days, according to the requirements of the case, each and every case being treated on its own merits. If the passengers are disembarked, and the vessel has undergone the regular process of fumigation, disinfection, etc., she is allowed to proceed to the upper quarantine station, where each and all of the steps already described are enacted *de novo*—or, in other words, she undergoes double disinfection, fumigation, and cleaning.

With that best of knowledge, born of experience, Dr. Holt years ago refused to recognize even the so called clean bills of health from infected ports. I refer to the disease producing and distributing centers of Colon, on the Isthmus of Panama, and Vera Cruz, on the Atlantic coast of Mexico, and the various ports of Cuba. All of them are constant sources of danger to ports trading with them, particularly southern ports. Previous to 1884, when Dr. Joseph Holt was elected President of the Board of Health of the State of Louisiana, old-time methods obtained on the Mississippi, and owing to those old-time, unenlightened practices, commerce on the Mississippi during the summer was practically killed. The detentions were lengthy and the charges so heavy that commerce by way of the Mississippi during the summer, or fever months, was almost out of the question; but thanks to Dr. Holt's careful study, all that has been done away with. Trade by the Mississippi goes on in summer the same as in winter, it being practically unhampered, a result that could be obtained, and obtained only, by the most elaborate methods instituted by Dr. Holt. Unimportant branches of trade that hitherto were practically unconsidered, such as the banana trade, have taken on the handsome proportions of \$1,000,000 per

annum. For one consignment of coffee that was received under the old system, it will be safe to say that hundreds are received to-day: in short, that the old-time method of quarantine, which debarred Louisiana of her just maritime trade, is now of the past.

In concluding this brief and very hastily written article, it is but just to Dr. Holt to state that he is the father of this most admirable of methods of maritime sanitation, and that to-day in Central and South America, in Mexico and the West Indies, all health authorities speak of the Holt system with admiration.

Quite recently, when in Port of Spain, Trinidad, one of the British West Indies, I learned from Dr. Leonard Crane, C.M.G., the Surgeon-General of the island, and Dr. C. Burgoyne Paisley, its ever vigilant health officer, that a system somewhat similar to the Holt system is about to be adopted there. I simply cite this to show how the good work done by Dr. Holt is bearing fruit, and how science, thanks to the conscientious and indefatigable workers of his type, is making constant strides.

In conclusion, it will be safe to say that, knowing what we do of germs, germ life, germicides, disinfectants, and the like, Dr. Holt has combined all of the best methods for destroying germs, and the result is "An Ideal Quarantine."

THE QUARANTINE METHODS OF LOUISIANA.

By JOSEPH HOLT, M.D., President Board of Health.

In describing the methods of disinfection used in the quarantine of Louisiana, it is necessary first to examine the system itself synthetically.

There are three maritime approaches to New Orleans: the Mississippi, which is the central and main avenue; the Rigolets, thirty miles to the eastward, a narrow strait connecting Lake Pontchartrain with Lake Borgne, and the Gulf of Mexico; and the Atchafalaya River near its debouchment into the bay of that name, and Mexican Gulf, eighty-two miles to the westward.

On account of the character of shipping coming through the two lateral approaches, "light in tonnage, and mostly from domestic ports," the Rigolets and Atchafalaya are completely closed by a proclamation of forty days' detention against all vessels from quarantined ports, compelling such to seek the Mississippi as the only available route to New Orleans. This is done in order to avoid the immense expense of keeping up three completely equipped stations, and to concentrate at a single point the fight against infection.

The quarantine in the Mississippi is a system composed of three stations, the first of which is an advance guard inspection station, situated at Port Eads, one hundred and ten miles below New Orleans, where the waters of South Pass are jetted into the Gulf.

When an inward bound vessel comes into the offing, she is immediately boarded by a thoroughly skilled medical officer, and a careful inspection is made of her sanitary record and present condition.

If from a non-quarantined port, and all is well, she is given *pratique*, and goes on to the city. If from a quarantined port, but presenting a clean health record of voyage, and no evidence of sickness of a dangerous or doubtful character, she proceeds to the upper quarantine station, situated on the left bank of the river, seventy miles below the city, where she is subjected to a full course of sanitary treatment, and is detained such length of time, not exceeding five days (except in rare instances, where further observation may be deemed necessary), as the Board of Health may provide.

If, upon inspection, a vessel entering the river is found to be foul—that is, showing positive or suspicious evidence of infection, either in a person then ill, or in a foul health record of voyage—she is at once remanded to the lower station, located on Pass a L'Outre, an unused outlet of the Mississippi, one hundred and three miles below the city. The sick, if any, are at once removed to the hospital, where every provision has been made for them. The vessel, with the well on board, is dropped down stream a few hundred yards and anchored. In the meantime the quarantine tugboat, with its complete disinfecting outfit, has been telegraphed for and speedily arrives from the upper station, when the work of disinfection begins, and does not cease until the vessel has been subjected to the most vigorous application of solution of the bichloride of mercury: her atmosphere, below deck, completely replaced with one heavily charged with sulphurous oxide, and every article of baggage and ship's wardrobe has been saturated with the mercuric solution.

A ship known to be infested with one of the three great pestilential diseases—smallpox, cholera, or yellow fever—can stand and must endure extraordinary treatment, even if clothing is wetted and some articles damaged. "They who go down to the sea in ships" assume the perils of the voyage, among which is this occurrence of finding themselves on an infected vessel and being compelled to undergo a cleansing, for they have no right to bring their perils ashore and endanger others.

The immediate segregation of the sick and the well, and disinfection of the ship and all baggage (in the case of a cholera infected vessel extended to the disinfectant washing out and refilling of the water tanks, destruction of the food supply and revictualling the vessel) constitute the treatment of an infected vessel at this station. The ship, together with all on board, is held for observation a period of ten days, or more, according to circumstances, when she is released and proceeds to the Upper Station, where the processes of sanitary treatment are repeated, with the addition of the use of moist heat applied to baggage, ship's apparel, etc. (which latter process will be described hereafter), and the vessel is then allowed to proceed to the city.

This course of treatment at the Upper Station, while probably unnecessary, is enforced purely as an extraordinary precaution.

Inasmuch as infected ships are the exception, but inasmuch also as the Board of Health will take no risk in the case of vessels from known infected or suspected ports, regardless of bills of health, the vast majority of vessels are treated at the Upper Station.

Arriving at this station, the vessel is brought alongside the wharf. All on board—officers, crew, and passengers—are at once sent ashore, where they find ample accommodation in commodious shelter, provided for their entertainment during the time occupied in the sanitary treatment of the ship and all baggage.

As soon as this is completed they are permitted to return aboard ship, where they remain under observation during the prescribed period, determined by the remoteness or nearness of the port against which these precautions are taken.

The object of this brief detention for observation, after the sanitary treatment of the vessel has been completed, is to allow for a probable outbreak of an infectious disease already incubating in the system of any one on board.

As an essential part of the service there is a tugboat of sufficient power to move a sailing vessel to or from the wharf.

In addition to this requirement, this boat is equipped with a complete outfit for generating and applying germicidal gas for displacement of the entire atmosphere within the ship, transported, perhaps, directly from some infected port. In the hold of this tug is constructed a wooden tank of two thousand gallons capacity, to hold the bichloride of mercury solution for the treatment of vessels in the Lower Quarantine, as described. This tank is furnished with a steam pump (made of iron on account of the greater resistance of that metal to amalgamation) supplied with three-quarter-inch rubber hose. (See Plate 1.)

In the sanitary treatment of a vessel in quarantine, there are three processes of disinfection concurrently applied.

APPLICATION OF BICHLORIDE OF MERCURY.

The first is the wetting of all available surfaces of the vessel, excepting cargo, but including bilge, ballast, hold, saloons, forecastle, decks, etc.,

with a solution of the bichloride of mercury, made soluble by an equal weight of muriate of ammonia, in the proportion of one part to one thousand of water.

The idea of using this agent as a disinfectant in municipal and "maritime sanitation" suggested itself to me while reading the chapter on "Wound Disinfection-Antiseptics," in the volume entitled "The Treatment of Wounds," by Lewis S. Pilcher, M.D., containing an account of the experiments of Dr. George M. Sternberg, with a table of chemical agents and their relative germicidal strengths, at the head of which stands the bichloride of mercury, and also a table of the results obtained by Koch in Berlin, 1881, and by Schede and Kummel in the Hamburg General Hospital in the same year.

The Board of Health immediately indorsed the idea and ordered the adoption of the bichloride of mercury as explained in the following letter:

NEW ORLEANS, July 17, 1884.

DR. THOMAS Y. ABY, *Resident Physician, Mississippi Quarantine Station:*

DEAR SIR: Because of the signal failure of carbolic acid as a disinfectant and prophylactic agent after a trial more fair and extended than has ever been allowed any other; because of its excessively offensive odor and oppressive and sometimes mischievous effects of its fumes; because of the low order of the commercial acid as a germicide, and the considerable expense involved in its use, you are hereby requested to discontinue its application.

In its stead I have ordered to your station two packages of bichloride of mercury and muriate of ammonia, the latter to act as a solvent.

In its preparation for use, take five and a half ounces of each, and dissolve in a half gallon of water; add this to forty gallons of water in a cask. I have sent three large watering pots, with a fine rose or spray. Your men can quickly wet down a ballast pile and all available surfaces of a ship, and it needs no repetition when once thoroughly applied.

The advantages of this agent are briefly these: The mercuric bichloride stands preëminently above all chemicals as a universal germicide. Not only are definite organisms immediately destroyed, but all protoplasmis and albuminoids are devitalized by it. It is efficient to accomplish this work when applied in a solution so weak as not to be recognized except by chemical reagents. It is devoid of color or smell. It does not poison the air by vaporizing, but adheres in an innocuous form to the surfaces upon which originally applied. Its cost is about one eighth that of carbolic acid.

I feel that this transition is quite as much of a relief to you, my dear doctor, as to the afflicted people on shipboard, who must surely suffer severely from the stifling fumes emanating from carbolic acid applied to surfaces heated by a July sun, as the people of this city can testify to their terrible cost.

The position of persons confined on shipboard under such circumstances, particularly in the instance of women and children as passengers, as related by yourself, must at times be most distressing. The Board of Health heartily joins with you in the satisfaction and sense of relief afforded by this change, which is an important step in the great work of humanizing our quarantine.

I remain, with great esteem, yours very truly,

JOSEPH HOLT, M.D.,
President Board of Health, State of Louisiana.

The bold adoption of this poisonous agent in domestic, municipal, and maritime sanitation at once called forth a flood of most gloomy forebodings of fearful effects upon the human system.

Our declaration at that time is confirmed by an experience of four years' trial on an immense scale, that our standard solution, as used in sanitation, is absolutely harmless to persons unless swallowed, it matters not how extensive or constant the contact. The only objection we have yet discovered is that certain articles, particularly blankets and flannels, treated by the solution sometimes become spotted, and colors liable to "run" when wetted, suffer; but unlike all other chemical agents applied as disinfectants, the textile itself is in nowise injured.

Recapitulating its merits: being colorless, stainless (except as stated), odorless, not injurious to fabrics, perfectly safe to handle for months at a time, easily applied, and exceedingly cheap, it is impossible to imagine a substance more efficient and as free from objection in practice. It is, indeed, the key unlocking difficulties otherwise insurmountable, and rendering practicable in municipal and maritime sanitary work the efficient execution of scientific requirement.

The amalgamating powers of the mercuric salt presented many serious obstacles in the contrivance of an apparatus for its application, all of which have been overcome without sacrificing simplicity, efficiency, or economy.

Immediately adjoining the quarantine wharf and near its water edge, is constructed a heavy framework of piles, each twelve inches in diameter. This structure has an ample base, is pyramidal, and forty-five feet in height above mean level of the river. On top of this is a circular wrought iron tank, capable of holding eight thousand gallons of the mercuric solution. (See Plate 2.)

In order to prevent contact of the latter with the iron, the interior of the tank is painted over with three coats of red lead and two of paraffine paint. The top of the tank is closed by a secure cover, to prevent access of light to the solution. This, together with the general exterior, is painted black.

On the top of this cover is placed centrally a sixty-gallon wooden cask, in which is dissolved the mercuric salt, which is then emptied into the tank through a wooden faucet. Seventy pounds are used for one charge.

In the tank near the lower edge are three heavy galvanized iron faucets, to each of which is screwed a lead of three-quarter inch four-ply rubber hose, the farther ends of which lie on the wharf. These are lengthened by additional sections to reach any part of the largest vessel. To the far extremity of each hose is attached a short, wide nozzle, provided with a stop-cock.

During disinfection, all three are simultaneously used, fore, aft, and amidship.

For spraying, we use a perforated, heavy block-tin rose, four inches across the face, similar to an ordinary watering-pot spray. These are made with a shank about six inches long, to fit snugly into the open end of the pipe.

On a single vessel we average fifteen hundred gallons of solution, but often use three thousand.

The process requires from thirty minutes to two hours according to circumstances.

SULPHUROUS OXIDE FUMIGATION.

As soon as the men have completed the work of "bichloriding" below decks, the fumigating pipe is then extended from the quarantine tugboat lying alongside. (See Plates 1 and 2.) It is lengthened by sections, being

fitted together like stovepipe, and conducted down a convenient hatchway to the bottom of the hold or as near the keelson as possible, preparatory to the fumigation of the entire vessel (and cargo if any) with sulphurous oxide. In the case of a sailing ship, one hatchway gives access of the sulphurous gas to the entire hold; but in large steamers the hold is subdivided by bulkheads into two or more distinct compartments, which must be treated separately.

In undergoing treatment, the cargo is not disturbed, except when the removal of bags of coffee is required, to permit the passage of the fumigating pipe, which is twelve inches in diameter, down into the dunnage at the bottom of the cargo.

I have given explicit instructions to coffee importers whereby the expense of removing bags to make this well, or shaft, through the cargo may be avoided. It is necessary to have an open framework shaft, allowing a clear inside space of fifteen inches, placed in the center of the main hatch in a sailing vessel, or in the center of each hatch in a steamship having bulkhead compartments. The framework of this shaft is set before loading, and should be cut flush with the top of the cargo.

This simple arrangement avoids all handling and delay.

When the connections are made and the fumigating pipe is arranged, the fan on the tugboat is started and the process of displacing, with sulphurous oxide, the entire atmosphere within the ship begins.

The length of time required to complete the fumigation varies from thirty minutes to three hours, according to size of vessel, number of compartments, etc.

The quantity of commercial roll sulphur used varies from one hundred to seven hundred pounds per vessel.

The apparatus invented for rapidly evolving and supplying the germicidal gas consists in a battery of eighteen furnaces, each supplied with a pan to contain the sulphur during combustion. These furnaces open into a common reservoir, to the further end of which is connected a powerful exhaust fan. (Sturtevant's No. 29.) (See Plates 3 and 4.)

The gas drawn by the fan is driven into a twelve-inch galvanized iron pipe, through which it is conducted over the side and down the hatchway of the vessel into the bottom of the hold.

The gas, as it is driven into the vessel, is quite hot, but would extinguish rather than create fire.

The outflow should not impinge directly against bags of coffee or bales of textiles, if it can be avoided, in order to prevent formation of sulphuric acid and some slight injury therefrom at that point.

In treating coffee, and for convenience in some other instances, the vertical lead of pipe into the hold is made of asbestos cloth, closely and heavily woven for our purpose.

Every opening is closely battened during the process and remains so for at least eight hours after it is discontinued.

The apparatus throughout is made ample in size and power for rapidity of work and economy in wear and tear, by lessening velocity and friction. The fan is run by a special engine at a slow rate as compared with its capacity, but driving into the ship one hundred and eighty thousand cubic feet per hour of atmosphere surcharged with sulphurous oxide.

APPLICATION OF DRY AND MOIST HEAT.

While these two processes of sanitary treatment of the vessel are going on, all bedding, ship's linen, cushions, mattresses, flags, mosquito nets, cur-

tains, carpets, rugs, all personal baggage and wearing apparel of whatever description, are removed from the ship to a commodious building in close proximity (see Plate 5), in which these articles are treated by moist heat at a temperature of not less than 230 degrees F.

The apparatus for this work consists in a steel, forty-horse power steam boiler (see Plate 9), for supplying steam to a superheating chamber a few feet distant, and which I will now describe. (See Plates 6, 7, and 8.)

The dimensions of this chamber, taken interiorly or inside measure, are sixty feet long, eleven feet wide, and seven feet high.

The framework is composed of three by three inch seasoned pine lumber, joined as in the construction of a frame house. Upon the outside of this framework (and corresponding to weather-boarding in the case of a house) is nailed tongued and grooved flooring material three fourths of an inch thick by six inches wide.

The inside or interior of the ends, rear, and top of the chamber is ceiled with the same material and a flooring of the same is also laid. Upon these interior surfaces is tacked heavy "Russian haircloth or felting;" and upon this, at intervals of three feet, are nailed parallel strips of wood one and one half by two inches, and, in turn, upon these strips is fastened another sheathing or ceiling of flooring plank, as already described.

This secures an air space between the haircloth and inner ceiling. Upon this now smooth interior surface of wood is finally tacked and held in place by very broad-headed nails, or better, by nails supplied with tin discs or washers, a double layer of "asbestos building felt," well lapped and securely tacked; thus rendering the interior of the chamber fireproof.

By the foregoing described construction it will be seen that the walls of the chamber, which are eight inches in thickness, consist of seven non-conducting media; first, the outer layer of planking; second, three inches of air space; third, an inner ceiling of planking; fourth, one inch thickness of "Russian haircloth;" fifth, one and one half-inch air space; sixth, a third layer of three fourths inch planking; seventh, a double layer, or interior lining, of heavy asbestos felting.

The front wall is divided into forty panels, eighteen inches wide each (see Plate 6), which represents that number of racks contained within the chamber.

Upon the bars of these racks the clothing, etc., is hung for exposure to disinfection by moist heat. (See Plate 7.)

These racks are constructed with a front and rear panel united by horizontal bars, six to each side. Each rack is suspended overhead, on traveling rollers, upon an iron rod which extends from the rear wall of the chamber to a support ten feet in front of the chamber; the rod, therefore, being twenty feet in length.

By this arrangement overhead, the racks may be drawn out and pushed in with facility, thus avoiding tracks or rods on the floor obstructing the movements of employés.

When drawn out the full length of ten feet, the rear panels of the racks securely close the chamber, as do the front panels when the racks are pushed in; thus admitting of the heating of the chamber during the time of hanging the articles of clothing, etc., on the rack bars preparatory to disinfection.

For this admirable device and, indeed, for the entire skeleton of the superheating chamber, including the dry heat double steam coils, we are indebted to the Troy Laundry Machinery Company, Chicago, Illinois. We have found the purchase of this apparatus, constructed to include

certain of our specifications, to be the most economical and satisfactory we could have desired.

The interior surface of each front panel is lined with a layer of Russian hair cloth, over which is applied a double layer of asbestos felting.

At intervals of seven and one half feet a bulkhead of one inch tongued and grooved flooring is constructed, subdividing the chamber into eight compartments. These bulkheads, or partitions, are made fireproof by a covering of a double layer of asbestos felting. The object of this arrangement is to provide against the spread of fire in the event of its occurrence.

In addition to this provision there is a double lead of one inch fire hose connected with a steam pump near the boiler, and at all times ready, within fifteen seconds notice, to turn on two streams of water upon any rack on which fire might have originated.

These minute specifications concerning provision against fire are particularly appreciated by ourselves; it cost us two fires and the destruction of a large amount of property to learn a lesson which experience alone could teach. Lacking experience and precedent, these accidents could not have been foreseen, and, therefore, could not have been provided against. They were the result of an underrating and failure to appreciate the prodigious force which the contrivance invented placed at our will to invoke.

Under the present arrangement, including early use of free steam, fire is hardly possible; but if it should occur we are prepared to draw out instantly the burning panel, to strip it of clothing, and to put out the fire.

With reasonable care and watchfulness on the part of the employés there need be absolutely no danger of loss by fire.

The superheating of this chamber is so provided as to furnish at will dry or moist heat, or both; and by a turn of the hand a temperature of 300 degrees F. can be obtained.

Within and at the end of this chamber next to and connected with the boiler are two manifolds, one above the other, to which is connected a system of forty-five three quarter-inch steam pipes (aggregating five thousand five hundred and nine lineal feet), placed horizontally near the floor of the chamber, running its full length, and supplied with a "bleeder" for conveying off the water of condensation.

This double coil furnishes the dry heat. (See Plate 8.)

Above and in close proximity to this system of pipes is extended a horizontal screen of galvanized iron one half-inch mesh, to catch and so prevent the coming in contact with the superheating pipes, any article falling from the racks. (See Plate 7.)

The moist heat is supplied by a one inch steam pipe laid centrally in the midst of the above described dry heat pipes and running the entire length of the chamber, constituting a steam main, connected with the boiler and controlled, as the others, by a ball-valve on the outside.

This pipe is perforated by eighty one twelfth-inch holes, so placed as to furnish steam to each rack.

During the time of hanging the articles of clothing, etc., on the racks, the dry heat is turned on and the temperature raised to about 190 degrees F., made known by a thermometer having a large mercurial column, and suspended near the center of the chamber, working on a slide or traveling rod in such a manner, when it is desired to make a reading, as to allow of being drawn forward (by a cord extending outside) to a long, narrow pane of glass set in the panel. This thermometer should have a scale of at least 275 degrees F.

As each rack is filled it is put back into place. By the time the last of the articles has been hung on the racks, the entire mass of the material

within the chamber has attained a temperature between 190 degrees and 200 degrees F., when free steam is turned on, the thermometer speedily rises to a point varying between 230 degrees and 240 degrees F., at which it is maintained for a period of twenty minutes.

The steam pressure in the boiler, at the beginning of this process, registers between one hundred and one hundred and ten pounds by the steam gauge; at the end of the process of blowing in steam the pressure will have fallen to about sixty pounds.

The steam is now entirely cut off from the chamber, the racks are drawn out, and their contents removed.

During the process of steaming, every article is perceived to be saturated and intensely hot, the steam freely permeating to the interior of mattresses, double blankets, etc.: but so great is the heat in the texture of the fabrics as to immediately expel all moisture upon drawing the racks and exposure to the open air. Shirts, collars, etc., instantly assume the crisp dryness they possessed before exposure, losing the musty smell of long packing in a trunk. Silks, laces, the most delicate woolen goods show no signs of injury whatever from the treatment.

Of course, articles of leather, rubber, and whalebone would be injured by the heat and are therefore disinfected with the mercuric solution and not permitted to go into the heated chamber.

Time required to charge chamber with apparel for disinfection, thirty minutes; time required for moist heat, twenty minutes; for removal of articles, fifteen minutes; a total of sixty-five minutes.

A large steamship, particularly a passenger vessel, may require two or three charges of the chamber. Amount of coal consumed, from two to four barrels per vessel.

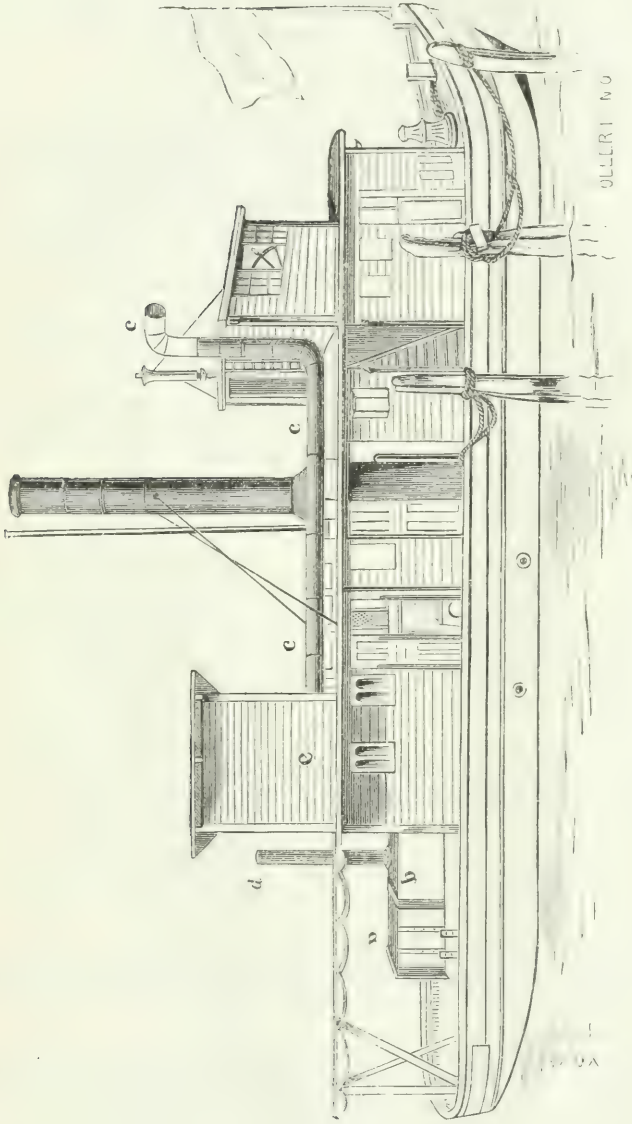
In the summer of 1885 we devised and put up a chamber of the above general plan, but wholly inadequate as to size for the requirements of our service. This was replaced by one operating on the same principle, but fifty feet long and supplied with a twenty-horse power boiler, which latter proved too small for rapid work. This apparatus was burned last spring.

Our present chamber and supply boiler are of the dimensions given in the appended plates.

We prepared the plans of the foregoing described apparatus during the summer of 1884. Obtaining a liberal appropriation of \$30,000 from the State Legislature for the avowed purpose of establishing a new system of quarantine through the elaborations of purely experimental work, and thoroughly indorsed and sustained in all our efforts by the progressive spirit of the press of New Orleans and by the merchants, we put the new system into practical operation and threw open the Mississippi to commerce June 10, 1885.

As it stands to-day (we sincerely believe in a nearly perfected state), it is the consummation of experimental effort, through a long and tedious process, beset with difficulties of the most perplexing and often disheartening kind.

Without precedent: having to deal with natural forces of prodigious power: repeatedly encountering unexpected difficulties: meeting with accidents: obliged continually to devise improvements upon our several inventions, and continually combatting a surly discontent and sometimes violent opposition from those subjected to the sanitary processes while these were still in an imperfect and unsatisfactory stage of development; the modernizing of quarantine and bringing it into line with other branches of science and art in the general progress, has been an expensive and difficult task.



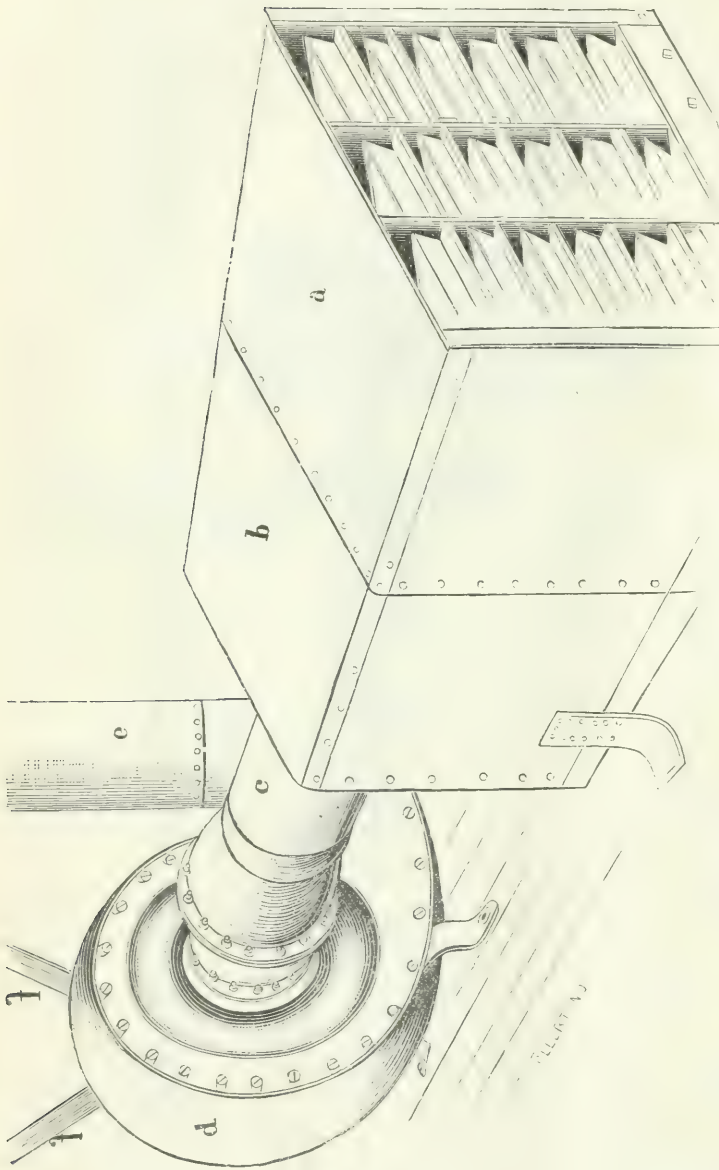
(PLATE I.) TUGBOAT WITH FUMIGATING APPARATUS.

a. Furnace. *b.* Reservoir for reception of gas. *c.* Discharge pipe, conveying gas to ship's hold. *d.* Escape pipe for gas when fan is at rest and sulphur burning; closed by a valve when fan is in motion. *e.* House protecting from weather the machinery for driving fan and containing accelerating gearing.



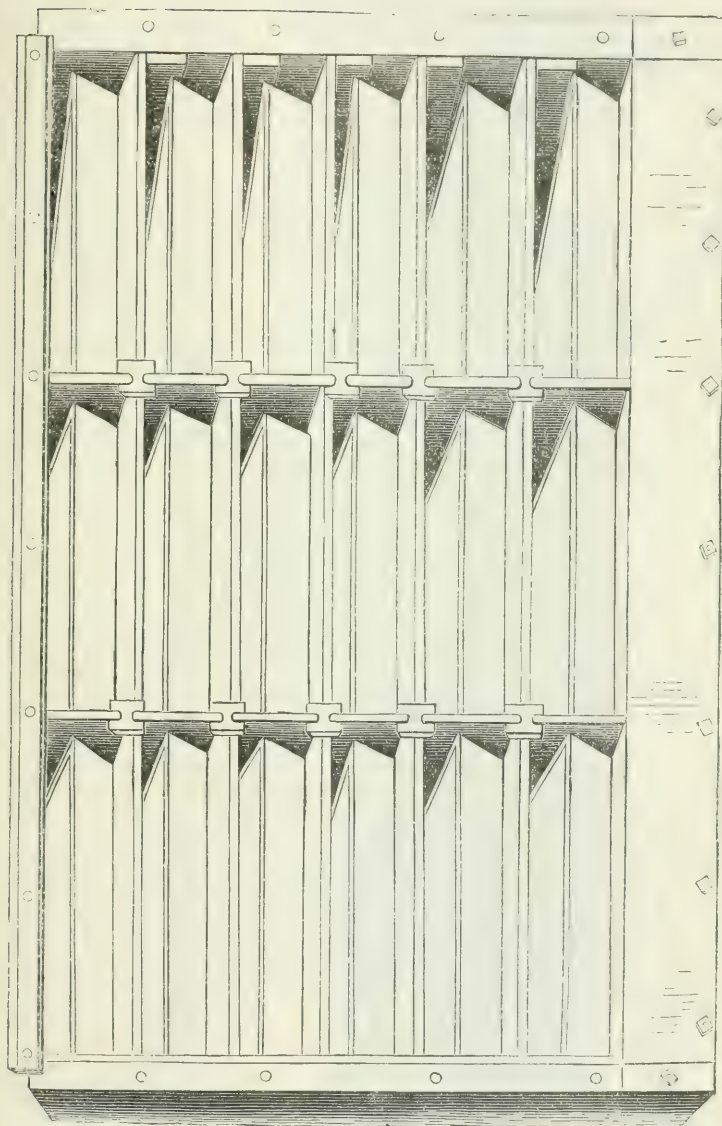
(PLATE 2.)

View of disinfecting wharf, showing tug fumigating vessel; elevated tank containing 8,000 gallons of bichloride of mercury solution, three leads of hose from tank to ship. Gangway leading to building containing superheating chamber.



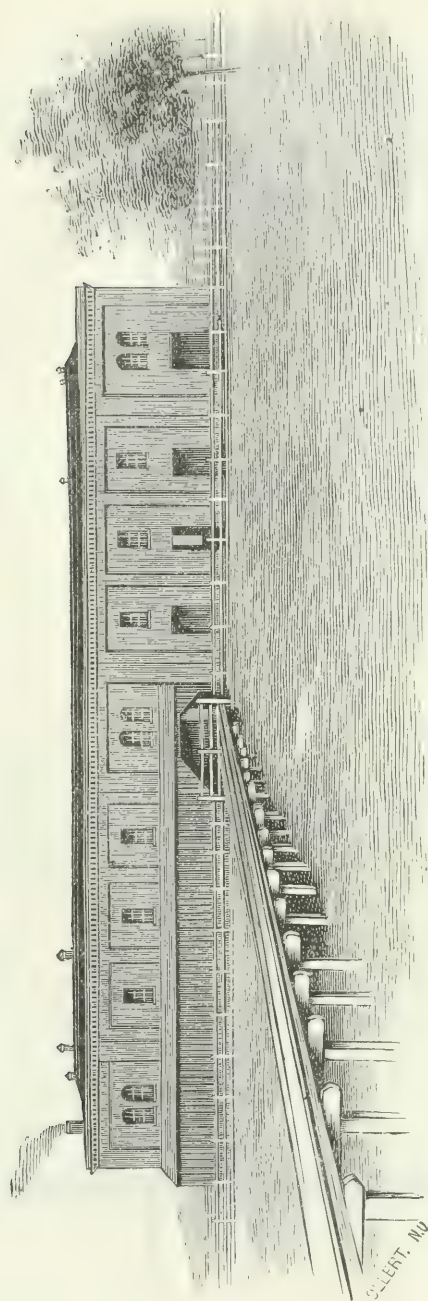
(PLATE 3.) FUMIGATING FURNACE, RESERVOIR, AND EXHAUST FAN.

a. Furnace of cast iron, $\frac{1}{2}$ inch thick, 3 feet wide, 3 feet long, 2 feet high. Upper and lower plates grooved for reception of partitions, and sides shouldered for same, as shown in Plate 4. *b.* Reservoir, No. 10 iron, same dimensions as furnace. *c.* Exhaust pipe connecting reservoir and fan. *d.* Exhaust fan, Sturtevant's No. 29, Medium Planing Mill Exhauster. *e.* Discharge pipe from fan, made of No. 20 galvanized iron. *f.* Driving belt. Height of legs supporting furnace and reservoir, 10 inches. On reservoir, at letter (*b*), should be shown a 12-inch opening for escape pipe, as indicated (*d*) Plate 1.



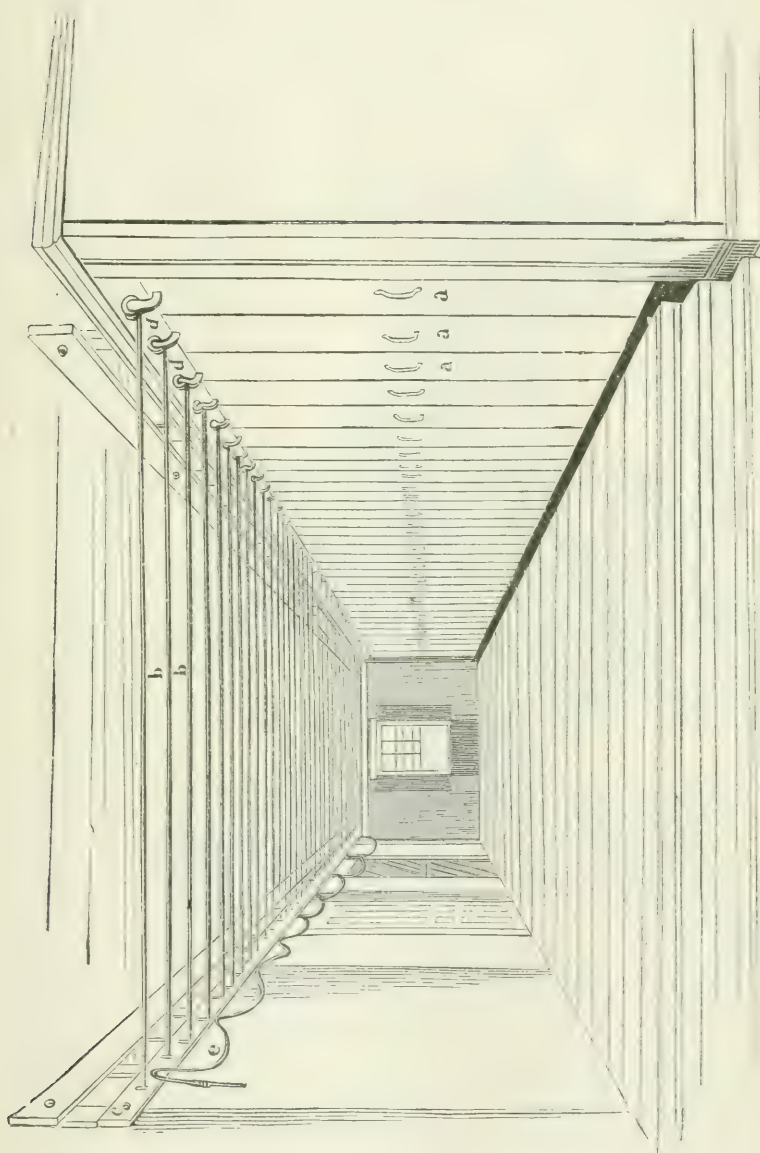
(PLATE 4.) FRONT VIEW OF FUMIGATING FURNACE.

Dimensions of each compartment, 12x3 $\frac{1}{4}$ inches. Pans of cast iron $\frac{1}{8}$ inch thick, 11 inches wide, and 2 feet 10 inches long, outside measure. Free space above pan about 1 $\frac{3}{4}$ inches.



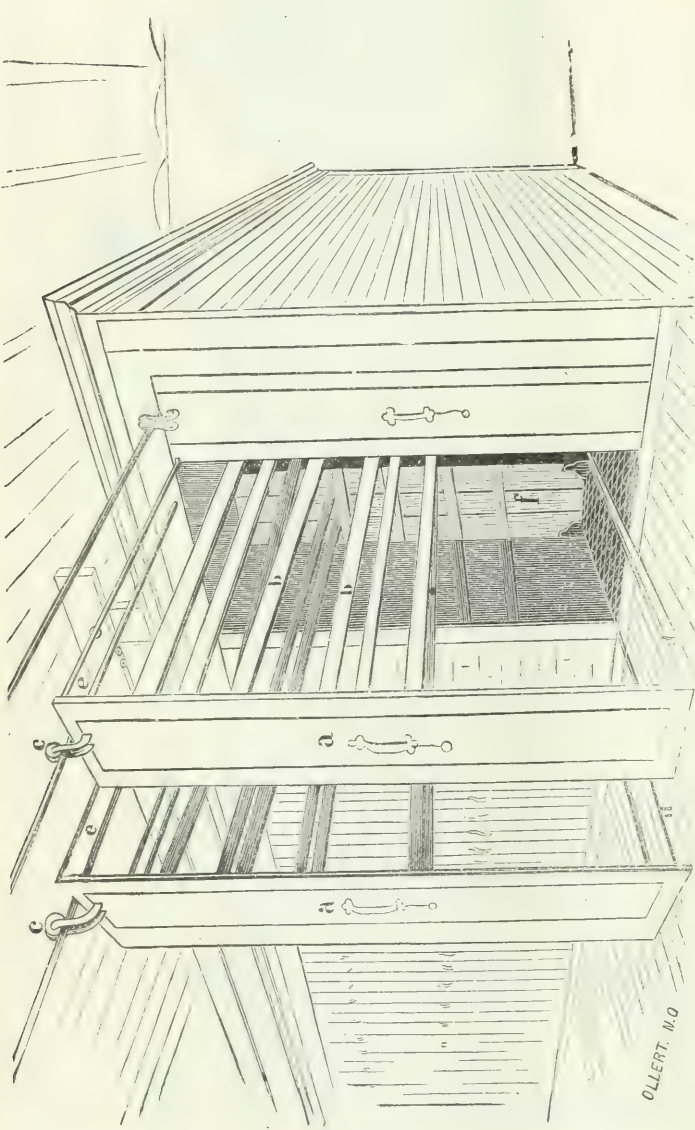
(PLATE 5.)

Brick building in which is located the superheating chamber; gangway in front connecting with disinfecting wharf.



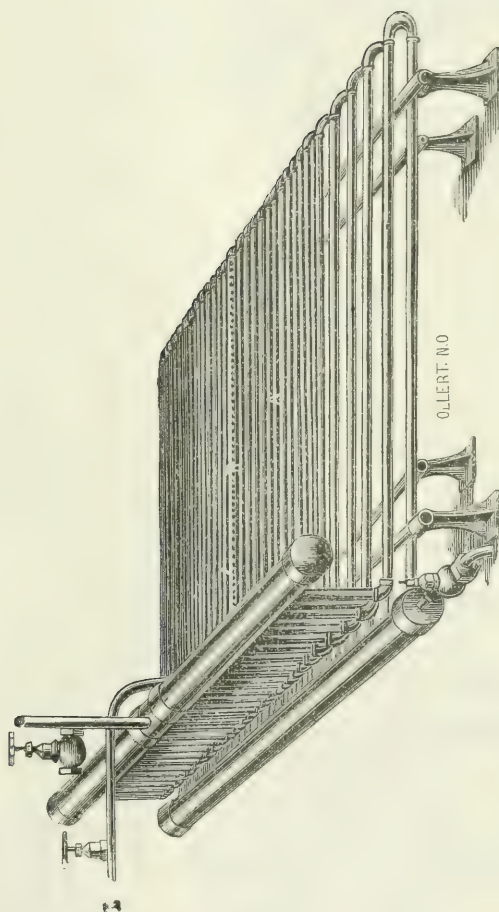
(PLATE 6.) FRONT VIEW OF CLOSED SUPERHEATING CHAMBER (60 FEET LONG).

a. Panels. *b.* Rods upon which panels are suspended and travel. *c.* Outer support of rods. *d.* Rollers suspending panels on rods. *e.* Fire hose.



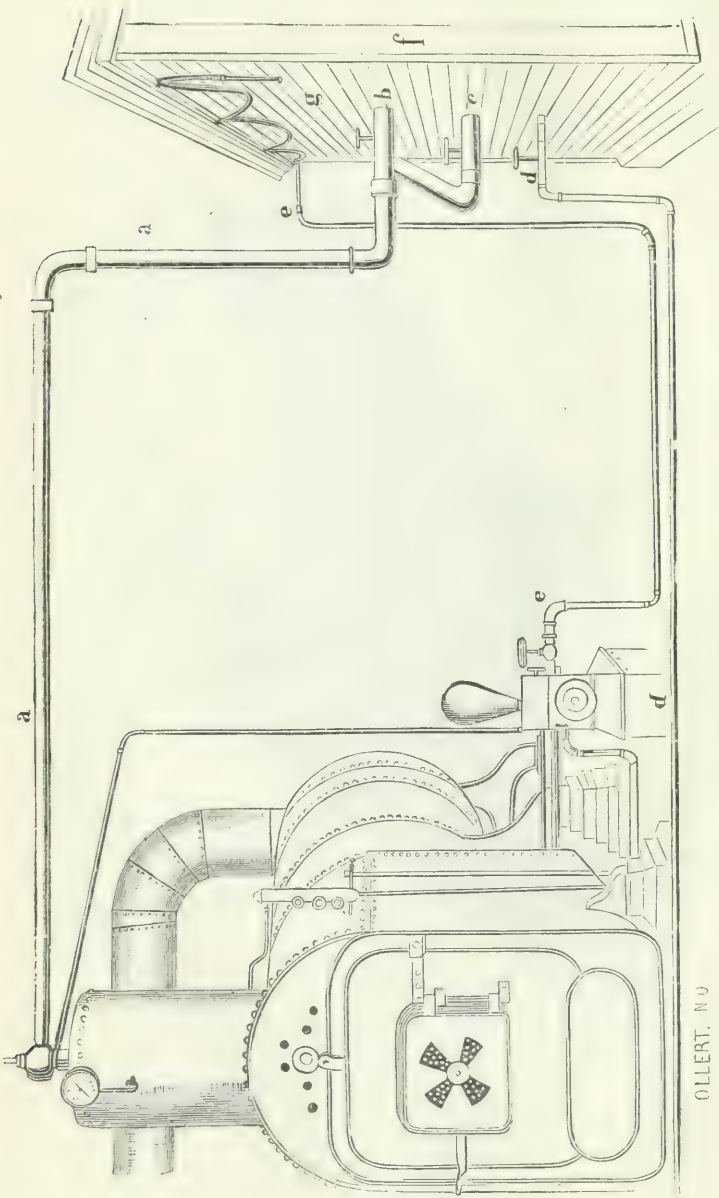
(PLATE 7.) SUPERHEATING CHAMBER, TWO PANELS DRAWN OPEN.

a. Panels. (Two lower rack bars not shown.) *b.* Rack bars. *c.* Rollers. *d.* Iron bars connecting front and rear panels. *e.* Rods upon which panels are suspended and travel. *f.* Rear panel. Galvanized iron $\frac{1}{4}$ -inch mesh screen in bottom of chamber.



(PLATE 8.)

Superheating steam coil for dry heat. *b-b*. Perforated steam pipe for moist heat.



(PLATE 9.) BOILER AND STEAM CONNECTION WITH SUPERHEATING CHAMBER.

OLLERT, NO 0

a. Steam-main from boiler. *b.* Pipe supplying dry heat. *c.* Pipe supplying moist heat. *d.* Bleeder. *e.* Pipe from pump supplying fire hose. *f.* Front of chamber. *g.* End view of chamber.

REPORT OF H. S. ORME, M.D., DELEGATE TO THE FIFTH ANNUAL CONFERENCE OF STATE BOARDS OF HEALTH.*

The Conference, composed of one or more delegates from each State Board of Health, was held in Cincinnati, Ohio, May 4, 5, and 7, 1888.

The various questions discussed by the Conference had previously been formulated by the Boards of Health of the several States, and of the Provinces of Canada. These questions, with slight modifications, formed the programme or order of business of the Conference. Many subjects were discussed which vitally concern the Pacific Coast, so that it was very important for California to be represented. The following is a brief synopsis of the proceedings:

The President, Dr. McCormack, of Kentucky, opened with an address in which he urged the necessity of a better system of quarantine, and especially drew the attention of the Conference to the ever present danger of a visitation from Asiatic cholera. The exposed condition of the port of New York, and consequently of the whole country, he said, was chiefly due to political dissensions.

Upon motion of Dr. Thompson, of Kentucky, the matter of the President's address was referred to a special committee.

The question proposed by the Provincial Board of Ontario, "The duties of the Conference in urging the erection of isolation hospitals for treatment of infectious diseases (scarlatina, diphtheria, etc., as well as smallpox), as a more economical and effective method than placarding houses and quarantining families where the diseases are present," was the first subject discussed.

Dr. Bryce, of Ontario, read a paper advocating the establishment of such hospitals. In London and in Glasgow there are hospitals for the treatment of typhus, and in New York there are typhus and smallpox hospitals. He advocated hospitals on the pavilion plan, or in groups of isolated cottages.

Dr. Probst stated that in Ohio local Boards had the authority to erect pesthouses and remove patients, but that authority was never exercised except in cases of pestilential diseases, such as smallpox. The families of the higher classes, moreover, would not consent to give up their children.

Dr. Thompson said that the government did not exist in any of the States that could carry out such a system. Where is the man who has the temerity to take a child out of bed, suffering with diphtheria three or four weeks, to one of the hospitals?

Dr. Baker, of Michigan, favored the establishment of such hospitals. "Diphtheria and scarlet fever are more important than smallpox. In our State we are aiming at removal of cases of diphtheria."

Dr. Lee, of Pennsylvania, considered the establishment of such hospitals was only a question of time. The people would soon regard them as a refuge and relief, rather than a means of tyrannical and cruel invasion of their rights. In Philadelphia, in cases of smallpox, the health authority

* Through an unforeseen accident this report was overlooked until it was too late to insert it in its proper place, after the Secretary's report; it was therefore thought proper to insert it here, with this explanation. (Ed.)

had the power to remove the patient against the wishes of the family. The Courts have sustained this view both in Philadelphia and in Pittsburg.

Dr. Thompson, of Kentucky, stated that in 1878 the matter was tested through the Courts of Florida and the Supreme Court, the Courts deciding that you had not the power to remove a patient. In Kentucky it was decided that you could isolate patients, but not remove them.

Dr. Hewitt, of Minnesota: "The rural population *do* want isolation hospitals. We have seen it time and again among our Scandinavian population that a cow house was used to isolate a sick child and its mother. Our people are learning the necessity of isolation, and, in cases of sickness, demanding it."

Dr. Orme, of California, said that in his State they had the power and authority to remove people from the hotels and boarding houses, but not from private homes. "In cases of smallpox, if we could go in and remove people, we could stamp out the disease right then and there. We have to placard and guard infected houses. This is the more necessary in my State because the native population, as a rule, are not afraid of smallpox."

Dr. Bryce closed the discussion, and the whole subject was then referred to a special committee.

The question proposed by the State Board of Health of Indiana was then called up: "Is it advisable to attempt to unify the method of procedure of the various State Boards of Health?"

After a brief discussion, Dr. Taylor, of Indiana, offered the following resolution:

Resolved, That a committee be appointed whose duty it shall be to examine the laws and methods of procedure governing the various State Boards of Health and those of the Provinces, and from them to construct a system of laws and procedure such as shall meet the approval of this body. Be it further

Resolved, That when such system or code is accepted by this body, every legitimate means be used to cause such to be enacted by the Legislatures of the several States.

The resolution was referred to the special committee, already existing on that subject, for consideration.

The questions, "Should the National Government assume the control of quarantine at all ports of entry?" (proposed by the State Board of Pennsylvania) and "Under which control should quarantine be, both in Canada and in the Union—under Federal Government (National), or under Provincial or State Governments (local)?" (proposed by the Provincial Board of Quebec), were discussed together.

Dr. Lee read an exhaustive paper, showing that, under the Constitution, Congress had the power to control maritime quarantine, and that it was only through the National Government that an efficient system for the protection of the whole country could be established. At the close of his paper he offered the following:

Resolved, That this Conference, recognizing the failure of the local authorities to administer quarantine effectually in a large number of cases, respectfully urges upon the National Government the duty of assuming control of quarantine at all ports of entry.

Dr. Hewitt said: "In the present emergency we cannot depend upon Congress. Even if obtained, an appropriation would not be available until July, and as the hot season approaches it behooves us to act promptly in some other direction."

Dr. Rauch, of Illinois: "The trouble with sanitation in this country is the difficulty of keeping politics out of legislation relating thereto. I am in favor of National quarantine, but I am opposed to the Marine Hospital Service having absolute control of it."

Dr. Baker, of Michigan: "I have no confidence in a National system of quarantine. We should not attempt to take away State control over this matter; the General Government should only aid the States in emergencies."

Dr. Orme, of California, said: "We should be friendly and try to act in concert with the Marine Hospital Service. They have done some good work. At the request of our State Board they placed inspectors in the Territory of Arizona, at Nogales and Yuma, to protect us from Mexico."

Dr. Thompson, of Kentucky, thought there were only two diseases with which the National Government ought to have anything to do—yellow fever and cholera.

Dr. Lee, in conclusion, was sorry that any members of the Conference should be influenced by prejudice.

The vote on the resolution was postponed, and Dr. Lee afterwards offered the following substitute, which was unanimously adopted:

Resolved, That this Conference heartily indorses the bill now before the Congress of the United States proposing to establish seven well equipped quarantine stations at certain points on the Atlantic and Pacific coasts, and urges that early action be taken upon the same; it also urges upon Congress the passage of the proposed Act to establish a National Bureau of Health.

The question, proposed by the State Board of Michigan, "What should be done to prevent the continued introduction of those dangerous communicable diseases, diphtheria and scarlet fever, which are common in this country, and which, therefore, cause the most deaths?" was next discussed.

Dr. Baker offered a resolution that these diseases be classed as pestilential and treated by quarantine.

Dr. Rauch, of Illinois: "The question is, who is to pay for this quarantine of foreign ships that bring in all sorts of disease? This is a question not alone of sanitary importance, but of national. It was only by a miracle that we escaped cholera last year. The New York authorities detained the "Alesia" only ten days, with six hundred and fourteen passengers from Palermo, a city in the cholera infected district. The more sanitary restrictions we throw upon immigrants the better for this country. Several epidemics of cholera have broken out in inland towns after the immigrants had unpacked their baggage—showing the want of proper disinfection at our ports of entry."

Dr. Thompson and Dr. Reeves thought that little could be effected by quarantine, Dr. Thompson maintaining that these diseases frequently originated *de novo*, without a preëxisting case.

Dr. Orme contended that cases of diphtheria and scarlatina should be isolated and quarantined against as carefully as smallpox or cholera.

Dr. McCormack considered this the most important matter before the Conference. More people have died in Kentucky in any one year from these diseases than had ever died from yellow fever and cholera.

Dr. Rauch held that there was no necessity for either of these diseases; quarantine would shut them both out.

Dr. Lee stated that there was a time when diphtheria and scarlatina were unknown in this country; they were introduced from abroad.

Dr. Hewitt was in favor of quarantining against them, if practicable. Of course, ships with these diseases on board should be quarantined, but between the different States it would be exceedingly difficult, if not impossible.

Dr. Reeves offered the following substitute for Dr. Baker's resolution:

Resolved, That in the judgment of this Conference the interest of public health will be conserved by emphasizing the fact that diphtheria and scarlet fever are diseases of such

highly contagious and infectious character, that they should be dealt with by the most complete isolation of *all cases*, the most thorough disinfection of all infected articles and places, and by quarantining at the seaboard, and at all other places, with the same care that is taken with reference to smallpox or cholera.

Adopted.

Dr. Baker, of Michigan, offered the following, which was unanimously adopted:

WHEREAS, It is alleged that yellow fever is now present in Florida, a State not represented here because it has not a State Board of Health, and which is in daily communication with other States, and thus threatens all those of our States in which that disease can prevail; therefore,

Resolved, That all Boards of Health in States adjoining Florida are urged to immediately and continually exercise extreme care to keep the fever from entering their States;

Resolved, That in case it is proved that yellow fever is present in Florida, Boards of Health of adjoining States should establish and maintain a thorough system of so called inland quarantine, which means the inspection of travelers, the isolation of all infected persons and articles, and complete disinfection; these methods to be enforced with the least possible interference with travel and commerce, consistent with the protection of the public health.

The questions, "Powers which Provincial and State Boards should have over local Boards" (proposed by the Provincial Board of Quebec), and "What legal authority ought State Boards of Health to possess in the absence of local Boards?" (proposed by the State Board of Vermont), were then taken up.

On motion, Division (*a*) of the questions proposed by the State of California was included for discussion: "Cannot a plan be devised to insure uniformity and increase of power in State Boards of Health, by formulating in conference a draft of the extent of the increased powers desired in matters of quarantine, compulsory notification of contagious diseases, and other sanitary matters within each State, neglected or refused by local Boards, which formula may be expressed in a bill laid before each State Legislature for passage."

The discussion was opened by Dr. Orme, of California, who was of the opinion that a State Board should have complete authority. When the local organizations are in harmony with the State Board, then its duties would be chiefly advisory; but when a local organization, for any reason, refuses to act under the direction of the State Board, then the latter should compel it to act, or step in and do the work itself.

Dr. Hewitt said that in his State (Minnesota) the State and local Boards acted in harmony, the local organizations being under the control of the State Board. The control of infectious diseases of animals is in the hands of the State Board. Last year an epidemic of smallpox was suppressed in his State without the knowledge of the public press.

Dr. Baker held that the State Board should have no authority over local Boards. It should merely gather and distribute the facts.

The question proposed by the State Board of Michigan: "What is each State Board of Health doing to advance sanitary science—by the collection of statistics of deaths and their causes; by the collection of statistics of sickness; by the collection of statistics of meteorological conditions coincident with sickness and deaths?"

There was a lengthy discussion, participated in by all the members present, each delegate stating what had been done in his own State. It was the opinion of the majority of the delegates that there ought to be a law in every State of the Union requiring a certificate of death, giving the cause, and signed by some properly constituted officer, before the burial of any human body. The local health organizations should make regular reports to the State Boards; and, in addition, should report promptly every

case of contagious disease. This would not only secure to us better protection against such diseases as smallpox, scarlatina, diphtheria, and cholera, but would furnish our State Boards with the necessary data from which full and correct tables of vital statistics could be compiled.

Dr. Allen, of Vermont, read a paper on the question: "What sanitary regulations are necessary in and about country residences?"

He called particular attention to the small and poorly ventilated sleeping apartments and to defective drainage, whereby kitchen slops and privies were allowed to contaminate springs and wells.

Dr. Lindsley, of Tennessee, gave, by request, an account of his extensive experience with cholera. He said that the only thing necessary to prevent the spread of cholera was thorough isolation and disinfection. If this international epidemic is to be stopped in its ravages, we must look to our legislators at Washington. Isolation and disinfection is the watchword, but it takes money to secure this end.

The following resolution was introduced by Dr. Hewitt, of Minnesota, and after a lengthy discussion, was unanimously adopted:

Resolved, That a committee of nine be elected by this Conference by ballot, to visit or correspond with the State, Provincial, and other authorities having charge of the seaboard to quarantine against dangerous infectious diseases, for the purpose of learning the methods there in use, and the character and amount of coöperation such authorities can and will give for the best protection of the people of this continent against said diseases, and that said committee be authorized to act for this Conference for this purpose and be instructed to report the results of their investigation to this Conference and to the State Boards of Health, and to arrange for such coöperation between the health authorities of this country should any such diseases threaten to invade or actually get a foothold on this continent. Such committee to have full power to fill vacancies.

The following were elected members of the committee: J. H. Rauch, Illinois; H. B. Baker, Michigan; C. M. Hewitt, Minnesota; J. N. McCormack, Kentucky; James Simpson, California; John D. Jones, Ohio; P. H. Bryce, Ontario; Benjamin Lee, Pennsylvania; T. G. Simmons, South Carolina.

The election of this committee was by far the most important work of the Conference.

At the next session of the Conference, Dr. Lee read a valuable paper on the question: "What should be the attitude of State Boards of Health toward leprosy?"

He cited many cases to show that leprosy was contagious and should be subjected to the strictest quarantine.

Dr. Orme, of California, said that this was a question which intimately concerned the Pacific Coast. He gave the history of several cases in California, occurring amongst the Chinese, and stated that the State had endeavored to adopt the most careful precautions with regard to the admission of lepers.

Dr. Lee offered the following resolution, adapted from that of a committee of the State Medical Society of California:

Resolved, That it is the sense of this Conference—

Firstly—That a strict quarantine should be established against leprosy, and that all lepers attempting to enter this country should be returned to whence they came;

Secondly—That those already here, or who develop the disease here, should be rigidly segregated;

Thirdly—That it is eminently desirable that entirely distinct hospitals should be provided for such cases; and,

Fourthly—That the bodies of deceased lepers should be cremated or buried in lime and their personal effects be destroyed by fire, after being treated with powerful disinfectants.

The subject being an entirely new one to the Conference, was, on motion, referred to a special committee, to report at the next meeting of the Conference.

Unfinished business being in order, the report of the committee appointed to draft a constitution and set of by-laws for the Conference (Dr. L. F. Salomon, of Louisiana; Dr. H. B. Baker, of Michigan; Dr. J. D. Plunkett; of Tennessee, Committee), was then called for.

Dr. Baker reported the following plan, which, on motion, was unanimously adopted:

CONSTITUTION OF CONFERENCE OF STATE BOARDS OF HEALTH.

The name of this association shall be "The National Conference of the State Boards of Health."

Membership.—The members of this Conference shall be the executive officers or the delegated representatives of the State Boards of Health of the United States, and of the Provincial Boards of Health of the Dominion of Canada.

Dues.—Each Board represented shall pay to the Treasurer of the Conference \$5 per year.

Votes.—Whenever demanded by two delegates, any question shall be determined by a vote, each State being entitled to one vote.

Officers.—The officers of this Conference shall be a President, Secretary, and Treasurer. The duties of each officer shall be those which are usually performed by such officers, and collectively the officers shall be an executive committee to make suitable provision for meetings of the Conference, for programme, etc.

Parliamentary Rules.—Cushing's Manual shall be the guide to parliamentary action, in cases of question.

Amendment of this Constitution.—Notice of the nature of any proposed amendment of this constitution shall lie upon the table from one annual meeting to another before coming to a vote. Such notice having been given, this constitution may be amended at any regular meeting of the Conference, if the majority of States and Provinces represented vote in favor of such an amendment.

Dr. McCormack was reelected President, and Dr. Probst elected Secretary, and Dr. Baker, Treasurer for the ensuing year.

The time and place for the next meeting was left to the Committee of Arrangements, and after an announcement by Dr. Lee that the Health Board of Pennsylvania would assume the expense of publishing the proceedings, the Conference adjourned *sine die*.

Immediately after the adjournment of the Conference, the Committee on Quarantine met and organized by the election of Dr. J. H. Rauch, as Chairman, and J. N. McCormack, as Secretary.

The Chairman was instructed to write to the State Board of Health of New York, reciting the line of action agreed upon by the Conference in regard to quarantine inspections and interstate coöperation, and make inquiry as to how far we might expect the assistance and coöperation of that Board. The Chairman was also instructed to correspond with the Surgeon-General of the Marine Hospital Service, in order to ascertain what protection the quarantine administered by his service is able to furnish to the country against contagious diseases.

On motion, it was agreed that four sub-committees be appointed; the first to report as to the efficiency of the quarantine stations from the St. Lawrence to Baltimore; the second, from Baltimore to Galveston; the third, the Pacific Coast; the fourth, to arrange for coöperation between the various State Boards:

Sub-committees.—1. From the St. Lawrence to Baltimore—Dr. Lee, Dr. Baker, Dr. Bryce, Dr. Hewitt. 2. Baltimore to Galveston—Dr. Simmons, Dr. McCormack, Dr. Jones. 3. Pacific Coast—Dr. Simpson, Dr. Rauch, Dr. McCormack; Dr. Orme to coöperate. 4. Coöperation between the States—Dr. Baker, Dr. Hewitt, Dr. Simmons.

On motion, the Chairman was authorized to formulate the questions to be answered or investigated by the different sub-committees.

In the Section on State Medicine of the American Medical Association, Dr. Baker, of Michigan, Chairman of the Section, delivered the annual address on "Recent Advances in State Medicine." He pointed out that

a practical result of the work done by State Boards of Health in spreading knowledge among the people, was a decrease of mortality from preventable diseases.

The most important part of local, State, and National legislation on this subject related to the collection of facts. We should have statistics of sickness as well as of mortality, and much could be learned from a comparison of such figures with the records of temperature changes and atmospheric conditions.

Dr. Benjamin Lee read a paper entitled "Should not the National Government Defend Our Ports Against the National Enemy—Contagious Disease?"

He showed that, according to the Constitution, Congress had authority to assume control of maritime quarantine for the general welfare of the country.

During the past twenty years the assaults of foreign contagion have cost us more lives than were sacrificed in the great war immediately preceding that period; yet most of these lives might have been saved by the expenditure of a comparatively insignificant sum.

When quarantine was regulated by the local authorities, owing to the great expense all stations could not be of equal efficiency; but the weakness of one was a source of danger to the whole country.

In conclusion, he offered the following resolution, which was adopted:

Resolved. That the Section on State Medicine respectfully suggests to the American Medical Association the importance of formally urging upon the National Congress the duty of at once assuming entire control of the maritime quarantine, and of taking immediate measures to make such quarantine effective before the advent of hot weather.

At another meeting of the section, Dr. Lindsley, of Tennessee, read a very valuable and interesting paper urging the enactment of laws requiring the "Cremation of Garbage."

At a general session of the American Medical Association, Dr. Walcott, Chairman of the Massachusetts Board of Health, delivered the annual address on State Medicine. From the vital statistics of Massachusetts, he showed that since the establishment of the State Board of Health in 1869, the percentage of deaths from zymotic diseases had decreased from 25.6 to 19. The most marked reduction was in the case of smallpox, which is a disease absolutely preventable by vaccination and revaccination. To take an individual case: Since the establishment of a Municipal Board of Health in the City of Somerville, the death rate from all causes had decreased from 22.86 to 16.68 per one thousand.

Under the conditions of civilized life the individual is perfectly helpless to secure the physical basis of health. There is no help but in coöperation on the most extended scale possible—individual, municipal, State, and National. The individual must be compelled to give up the liberty to injure his neighbor; the city must be restrained from converting into a sewer the river which supplies water to the villages on its banks below; no State should permit its own causes of disease, whether persons or things, to be transported into another State; and lastly, the General Government should take cognizance of those causes of disease which can be controlled by no other power.

In conclusion, he urged the proper organization of some central health authority, whether in the form of a Bureau of Health, or a Board of Health, provided only that some of the great resources of the nation might be applied to the protection of that most valuable of all property, *human life*.

A resolution was adopted by the Association, urging upon Congress the necessity of the immediate passage of Senate Bill No. 2493—"To Perfect the Quarantine Service of the United States."

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THIRD ANNUAL REPORT

OF THE

BOARD OF DENTAL EXAMINERS

.

OF THE

STATE OF CALIFORNIA.



SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.

1887.

REPORT.

To his Excellency R. W. WATERMAN, Governor of the State of California :

SIR: The Board of Dental Examiners of the State of California submit the following as their third annual report of its proceedings, together with an account of all moneys received and disbursed, in compliance with the requirements of that certain Act of the Legislature entitled "An Act to insure the better education of practitioners of Dental Surgery, and to regulate the practice of Dentistry in the State of California," approved March 12, 1885, a copy of which is hereunto annexed.

Since issuing the last report, the Board has held four meetings.

On March 21, 1887, Governor Bartlett reappointed on the Board Thos. Morfiew, D.D.S., of San Francisco, term expired.

On August 4, 1887, Governor Bartlett appointed J. J. Birge, of San Francisco, vice S. S. Southworth, of Sacramento, term expired.

On October 19, 1887, Governor Waterman appointed H. J. Plomteaux, D.D.S., of San Francisco, vice S. W. Dennis, of San Francisco, resigned.

At the meeting of September 13, 1887, the percentage required in examination of candidates for certificates to practice Dentistry was reduced from seventy-five to seventy per cent.

At the meeting of October 18, 1887, ten candidates appeared for examination, all of whom successfully passed. At this meeting the election of officers was held. W. J. Younger, M.D., of San Francisco, was elected President, and Thomas Morfiew, D.D.S., of San Francisco, was elected Secretary.

The following are the present officers and members of the Board :

W. J. Younger, M.D., President.....	San Francisco.
E. W. Biddle.....	Healdsburg.
J. S. Crawford.....	Los Angeles.
J. J. Birge.....	San Francisco.
H. J. Plomteaux, D.D.S.....	San Francisco.
C. W. Hibbard, D.D.S.....	San Francisco.
Thos. Morfiew, D.D.S., Secretary.....	San Francisco.

During the past year, twelve persons have been registered, eight Diplomas have been indorsed, and ten candidates have received certificates on examination.

A list of all whose names have been registered, and of all whose Diplomas have been indorsed as satisfactory to the Board, and of all who have received certificates by examination of the Board, is hereto annexed.

The following is an account of all money received and disbursed by the Board since the last report :

RECEIPTS.

For registration, \$1 for each, twelve persons.....	\$12 00
Received from indorsement of diplomas, \$10 for each applicant, eight applicants.....	80 00
From examinations, \$10 for each applicant, twelve applicants.....	120 00
Balance on hand at last report.....	135 50
Total.....	\$347 50

DISBURSEMENTS.

Printing	\$7 15
Stationery	32 80
Traveling expenses of members	99 00
Necessary clerical expenses	35 00
Rent of hall	61 00
Incidentals	6 60
Total	\$241 55
Balance in hand of Secretary	105 95

All persons who are now practicing dentistry in this State, and who have not registered or received a certificate from this Board, in pursuance of the Act mentioned, are violating the law, and are subject to arrest and a fine of \$50 to \$200, or imprisonment for six months in the county jail, for each and every offense. It will be necessary for all persons who may hereafter desire to engage in the practice of dentistry in this State to secure a certificate from this Board, upon a diploma from a reputable dental college, or after examination in dental surgery, as required by the Act of March 12, 1885.

In examining applicants for certificates to practice Dentistry, the Board will examine in the branches of Anatomy, Physiology, Histology, Pathology and Therapeutics, Materia Medica, Surgery, Chemistry, Operative Dentistry, Prosthetic Dentistry, Clinical Operative Dentistry, and Irregularities. All examinations must be in writing, and the applicant must receive a general average of seventy per cent to entitle him to a certificate. The regular meeting for examination of candidates will be held on the third Tuesday of October of each year.

We recommend that Section 6 of the dental law be amended, so that the informer of violations of the Act, "in cases of conviction," shall receive one half of the fine imposed.

All of which is respectfully submitted.

Board of Dental Examiners of the State of California.

W. J. YOUNGER, M.D., President.

THOMAS MORFFEY, D.D.S., Secretary.

CHAPTER CXXVII.

An Act to Insure the Better Education of Practitioners of Dental Surgery, and to Regulate the Practice of Dentistry in the State of California.

[Approved March 12, 1885.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. It shall be unlawful for any person, who is not at the time of the passage of this Act engaged in the practice of Dentistry in this State, to commence such practice unless he or she shall have obtained a certificate, as hereinafter provided.

SEC. 2. A Board of Examiners, to consist of seven practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this Act. The members of said Board shall be appointed by the Governor from the dental profession of the State at large. The term for which the members of said Board shall hold their office shall be four years, except that two of the members of the Board first to be appointed under this Act, shall hold their office for the term of one year, two for the term of two years, two for the term of three years, and one for the term of four years, respectively, and until their successors shall be duly appointed and qualified. In case of a vacancy occurring in said Board, such vacancy shall be filled by the Governor, in conformity with this section.

SEC. 3. Said Board shall choose one of its members President, and one the Secretary thereof, and it shall meet at least once in each year, and as much oftener and at such times and places as it may deem necessary. A majority of said Board shall, at all times, constitute a quorum, and the proceedings thereof shall, at all reasonable times, be open to public inspection.

SEC. 4. Within six months from the time this Act takes effect, it shall be the duty of every person who is now engaged in the practice of dentistry in this State to cause his or her name and residence or place of business to be registered with said Board of Examiners, who shall keep a book for that purpose. The statement of every such person shall be verified under oath before a Notary Public or Justice of the Peace, in such manner as may be prescribed by the Board of Examiners. Every person who shall so register with said Board as a practitioner of dentistry shall receive a certificate to that effect, and may continue practice as such without incurring any of the liabilities or penalties provided in this Act, and shall pay to the Board of Examiners for each registration a fee of one dollar. It shall be the duty of the Board of Examiners to forward to the County Clerk of each county in the State a certified list of the names of all persons residing in his county who have registered in accordance with the provisions of this Act, and it shall be the duty of all County Clerks to register such names in a book to be kept for that purpose.

SEC. 5. Any and all persons, who shall so desire, may appear before the Board at any of its regular meetings and be examined with reference to their knowledge and skill in dental surgery; and if the examination of any such person or persons shall prove satisfactory to said Board, the Board of Examiners shall issue to such persons as they shall find to possess the requisite qualifications, a certificate to that effect, in accordance with the provisions of this Act. Said Board shall also indorse as satisfactory diplomas from any reputable dental college, when satisfied of the character of such institution, upon the holder furnishing evidence, satisfactory to the Board, of his or her right to the same, and shall issue certificates to that effect within ten days thereafter. All certificates issued by said Board shall be signed by its officers, and such certificates shall be prima facie evidence of the right of the holder to practice dentistry in the State of California.

SEC. 6. Any person who shall violate any of the provisions of this Act, shall be deemed guilty of a misdemeanor, and, upon conviction, may be fined not less than fifty dollars nor more than two hundred dollars, or confined six months in the county jail, for each and every offense. All fines recovered under this Act shall be paid into the Common School Fund of the county in which such conviction takes place.

SEC. 7. In order to provide the means for carrying out and maintaining the provisions of this Act, the said Board of Examiners shall charge each person applying to or appearing before them for examination for a certificate of qualifications, a fee of ten dollars, which fee shall be in no case returned; and out of the funds coming into the possession of the Board from the fees so charged, and penalties received under the provisions of this Act, all legitimate and necessary expenses incurred in attending the meetings of said Board shall be paid; and no part of the expenses of the Board shall ever be paid out of the State Treasury. All moneys received in excess of expenses above provided for, shall be held by the Secretary of said Board as a special fund for meeting the expenses of said Board, and carrying out the provisions of this Act, he giving such bonds as the Board shall from time to time direct; and said Board shall make an annual report

of its proceedings to the Governor by December first of each year, together with an account of all moneys received and disbursed by them pursuant to this Act.

SEC. 8. Any person who shall receive a certificate from said Board to practice dentistry, shall cause his or her certificate to be registered with the County Clerk of the county in which such person may reside, and the County Clerk shall charge for registering such certificates a fee of one dollar. Any failure, neglect, or refusal on the part of any person holding such certificate to register the same with the County Clerk as above directed, for a period of six months, shall work a forfeiture of the certificate; and no certificate, when once forfeited, shall be restored, except upon the payment to the said Board of twenty-five dollars as a penalty for such neglect, failure, or refusal.

SEC. 9. Any person who shall knowingly and falsely claim or pretend to have or hold a certificate of license, diploma, or degree, granted by any society organized under and pursuant to the provisions of this Act, or who shall falsely, and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section six.

SEC. 10. Nothing in this Act shall be so construed as to prohibit any practicing physician from extracting teeth.

SEC. 11. This Act shall take effect immediately.

OFFICIAL REGISTER

OF DENTISTS HOLDING CERTIFICATES FROM THE BOARD OF DENTAL EXAMINERS IN THE STATE OF CALIFORNIA.

ALAMEDA COUNTY.

Beals, C. H.	Oakland.
Bills, Albert V. (diploma indorsed)	Oakland.
Bellills, E. K.	Oakland.
Burnett, E. K.	Oakland.
Brooks, W. E.	Oakland.
Bishop, M. E.	Alameda.
Bates, C. P.	Berkeley.
Barradas, F. C.	San Leandro.
Bernard, Geo. (diploma indorsed)	Livermore.
Cole, R. E.	Oakland.
Craig, W. H.	Oakland.
Carpenter, O.	Oakland.
Cool, R. H.	Oakland.
Cornwall, A.	Oakland.
Cool, G. W.	Oakland.
Danziger, G. A.	Oakland.
Dimmick, J.	Oakland.
Dunn, R. K.	Oakland.
Edwards, B. F.	Oakland.
Gilman, S. M.	Oakland.
Garcia, M. J.	San Leandro.
Halsey, I. S.	Oakland.
Hall, T. W.	Oakland.
Hutton, J. A. D.	Berkeley.
Hempstead, J. E.	Oakland.
Hackett, S. A.	Oakland.
Kreichbaum, G. H.	Oakland.
Koehler, F.	Sunol.
Kenworthy, L.	San Leandro.
Lane, C. S.	Oakland.
Lee, E. M.*	East Oakland.
Luce, G. J.	Oakland.
Meek, R. W.	Oakland.
Morries, A. H.	Oakland.
Morris, T. H.	Oakland.
Merriman, A. F.	Oakland.
Merriman, A. F., Jr.	Oakland.
Petton, L. D.	Oakland.
Rodolph, C. F.	Oakland.
Rabe, J.	Oakland.
Stoakes, F. C.	San Leandro.
Simmons, W. H.	Oakland.
Schmidt, G. L.	Oakland.
Schumer, A. C.	Oakland.
Saxe, Frederic J. (diploma indorsed)	Oakland.
Savage, S. L.	Livermore.
Tate, S. P., Jr.	Oakland.
Titcomb, C. B.	Oakland.
Wilson, O. F.	Oakland.
Waltz, G. W.	Oakland.

* Deceased.

AMADOR COUNTY.

Gray, John	Ione.
Gabbs, E. J.	Sutter Creek.
La Due, W. K.	Plymouth.

BUTTE COUNTY.

Crum, T. A.	Chico.
McFadgen, A.	Chico.

Norman, Geo. H.	Gridley.
Read, W. S.	Oroville.
Stewart, Robert (diploma indorsed)	Chico.
Vanaukin, J. R.	Chico.
Ward, S. T.	Chico.
Wasley, D. W.	Chico.

COLUSA COUNTY.

Ciley, J. L.	Little Stony.
Pirkey, M.	Willows.
Smith, Frank Z.	Colusa.
Washer, W. A.	Willows.

CONTRA COSTA COUNTY.

McCabe, Ed.	Brentwood.
Moore, J. S.	Martinez.
Moore, J. S., Jr.	Martinez.

CALAVERAS COUNTY.

Oviatt, S. M.	San Andreas.
Smith, C. D.	Angels Camp.
Turner, Peter T.	Murphys.

EL DORADO COUNTY.

Stone, W. W.	Placerville.
Tyson, Chas.	Placerville.
Walk, Chas. L.	Placerville.

FRESNO COUNTY.

Cooper, J. C.	Fresno.
Doyle, B. W.	Fresno.
Hunsaker, A. L.	Fresno.
Hendricks, H. T.	Kingsburg.
Prather, W. J.	Fresno.

HUMBOLDT COUNTY.

Beverton, D. W.	Eureka.
Ingersall, A. E.	Eureka.
O'Conner, D. L.	Blocksburg.
Ray, C. B.	Arcata.
Thompson, R. P.	Ferndale.
Weldon, J. A.	Eureka.
Weldon, E. J.	Eureka.

KERN COUNTY.

Bonham, J. F.	Bakersfield.
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LOS ANGELES COUNTY.

Adams, S. H.	Los Angeles.
Bird, W. R.	Los Angeles.
Baldwin, C. V.	Los Angeles.
Burgess, R. F.	Santa Ana.
Cunningham, R. G.	Los Angeles.
Crawford, J. S.	Los Angeles.
Case, Isaac M. (diploma indorsed)	Pomona.
Dunn, J. H.	Pomona.
French, L. W.	Los Angeles.
Harlan, C. N.*	Los Angeles.
Hubbell, A. B.	Los Angeles.
Hollingsworth, M. W.	Los Angeles.
Hollingsworth, J. W.	Los Angeles.
Janes, R. K.	Pasadena.
Knepper, G. (examined by Board)	Los Angeles.
Masser, W. H.	Los Angeles.
McCoy, John C.	Orange.
Millard, G. A.	Compton.

Nichols, E. A. (diploma indorsed)	Pasadena.
Palmer, Frank M.	Los Angeles.
Parker, C. H. (examined by Board)	Los Angeles.
Stephens, Frank E.	Los Angeles.
Stephens, C.	Los Angeles.
Spinks, M. E.	Los Angeles.
Smith, Uriel	Los Angeles.
Shoemaker, R. H.	Los Angeles.
Small, H. E.	San Gabriel.
Tolhurst, S. H.	Los Angeles.
Tolhurst, G. W.	Los Angeles.
Todd, Baxter	Los Angeles.
Todd, Robt. A. (diploma indorsed)	Los Angeles.
Vanderlip, John F.	Los Angeles.
Vanderlip, Geo. G.	Santa Ana.
Von Bonhurst, C. G.	Santa Ana.
White, J. M.	Pomona.
Wells, L. W.	Los Angeles.
Wilder, D. R.	Los Angeles.
Young, John E.	Los Angeles.
	Santa Ana.

LAKE COUNTY.

Gilstrop, J. W.	Kelseyville.
Hutchins, J. M.	Lakeport.
Redmond, J. J.	Middletown.

MARIN COUNTY.

Thomas, H. B.	San Rafael.
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MODOC COUNTY.

Camicia, L. S.	Lookout.
Epperson, J. H.	Alturas.
Taylor, J. M.	Alturas.

MENDOCINO COUNTY.

Card, Ira D.	Ukiah.
Fare, John	Westport.
Hoffman, M.	Ukiah.
Holmes, C. A.	Mendocino City.
Hogshead, W. H.	Ukiah.
Mitchell, Hiram H.	Ukiah.
Mitchell, Marting N.	Ukiah.
McCowan, G.	Ukiah.
Willsey, T. F.	Covelo.

MERCED COUNTY.

Prather, W. R.	Merced.
Wassman, Max.	Merced.

MONTEREY COUNTY.

Barden, W. N.	Salinas.
Lemon, Geo. B.	Salinas.

NAPA COUNTY.

Davis, C. E.	St. Helena.
Farman, C. H.	Napa.
Hackett, F. M.	Napa.
Hackett, C. C.	Napa.
Key, J. W.	Calistoga.
Porter, E. M.	Napa.
Porter, S. P.	Napa.
Root, W. A.	St. Helena.
Sabin, C. R.	St. Helena.

NEVADA COUNTY.

Carr, G. B.	Grass Valley.
Chapman, A.	Nevada City.

Chapman, Mrs. N. E.	Nevada City.
Eastman, W. W.	Nevada City.
Hays, Irwin W.	Grass Valley.
Harris, S. M.	Grass Valley.
Harris, M. P. (diploma indorsed)	Grass Valley.
Lancaster, C. E.	North San Juan.
Martin, S. D.	Nevada City.
McIntyre, T. W.	Nevada City.
Pennington, A. R.	Nevada City.
Robinson, E. A.	Nevada City.
Relly, J. W.	Grass Valley.
Ward, S. T.	Nevada City.

PLUMAS COUNTY.

Cate, David B. (diploma indorsed)	Quincy.
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PLACER COUNTY.

Hitchcock, J. W. (examined by Board)	Auburn.
Hawver, J. C.	Auburn.
Newsom, G. W. (examined by Board)	Auburn.
Rea, John	Lincoln.
Smith, J. F.	Forest Hill.
Wilson, M. W.	Dutch Flat.
Ward, J. N. (examined by Board)	Newcastle.

STANISLAUS COUNTY.

Drullard, T. W.	Modesto.
Moad, V. R.	Modesto.
Preshaw, R. G.	Oakdale.

SACRAMENTO COUNTY.

Bates, B. F.	Folsom.
Gardner, Ed.	Sacramento.
Horner, J. Van C.	Sacramento.
Light, W. W.	Sacramento.
Milliken, Chas. T. (diploma indorsed)	Sacramento.
Pierson, H. H.	Sacramento.
Reid, T. B.	Sacramento.
Shaw, I. G.	Sacramento.
Shields, F. M.	Sacramento.
Stephenson, C. H.	Sacramento.
Southworth, S. S.	Sacramento.
Southworth, E. L. (diploma indorsed)	Sacramento.
Tebbetts, Frank F.	Sacramento.
Wood, Wm.	Sacramento.

SISKIYOU COUNTY.

Hearn, F. G.	Yreka.
Lorrison, Chas. A.	Yreka.
Remington, C. L. (diploma indorsed)	Yreka.
Millbery, Arthur H.	Jordan.

SHASTA COUNTY.

Gleaves, A. D.	Anderson.
Hartman, Wm. P.	Shasta City.
La Baro, W. H.	Shasta City.
Manchester, M. R.	Redding.
Tope, John H.	Redding.

SAN DIEGO COUNTY.

Barnes, F. J.	San Diego.
Cave, D.	San Diego.
Coomes, F. E.	San Diego.
Cogswell, Thos. (diploma indorsed)	El Cajon.
Gould, H. W.	San Diego.
Gildea, Bernard M. (diploma indorsed)	San Diego.
Harbison, H. R. (diploma indorsed)	San Diego.

Matthews, E. S. (diploma indorsed)	San Diego.
Philips, R. F.	San Diego.
Parker, D. G. (diploma indorsed)	West Fall Brook.
Townsend, E. L. (diploma indorsed)	San Diego.
Wasson, John B. (diploma indorsed)	San Diego.

SAN BERNARDINO COUNTY.

Bedford, L. N. (diploma indorsed)	San Bernardino.
Bogart, S. C.	San Bernardino.
Musselman, S.	Cucamonga.
Packard, Chas. W.	Riverside.
Sylvester, C. W.	Riverside.
Whitlock, Alma	San Bernardino.
Westover, G. C.	Riverside.

SANTA BARBARA COUNTY.

Doulton, G. H.	Santa Barbara.
Dimock, H. C.	Lompoc.
Lee, D. B.	Santa Barbara.
Livermore, Geo. W.	Santa Barbara.
Moore, H. W. (diploma indorsed)	Santa Barbara.
Shrewsbury, N.	Santa Barbara.
Stauffer, H. W.	Santa Barbara.
Van Winckel, H. M.	Santa Barbara.
Yates, Lorenzo G.	Santa Barbara.

SAN MATEO COUNTY.

Decker, John H.	San Mateo.
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SANTA CLARA COUNTY.

Argall, Frank L.	San José.
Barker, Albert M.	San José.
Brigham, K. A.	Gilroy.
De Crow, Warren	San José.
Finnigan, L.	San José.
Fleming, C. K.	San José.
Fisher, Mrs. Minnie	San José.
Gallup, Thos. E.	Santa Clara.
Gaston, W. A.	San José.
Gaston, A. A. (examined by Board)	San José.
Gothard, J. T.	Los Gatos.
Higgins, C. R.	Mountain View.
Hooker, A. O.	San José.
Hall, E. C.	San José.
Holmes, Stephen	San José.
King, J. F.	San José.
Klein, N.	San José.
Knapp, A. R.	San José.
Kingsbury, Wm. B.	Santa Clara.
Ledyard, F. R.	San José.
Rogers, E. P.	Gilroy.
Rhodes, S. R.	San José.
Rogers, F. S.	Gilroy.
Sprake, W. T.	San José.
Spaw, C. R.	San José.
Whipple, T. S.	San José.

SANTA CRUZ COUNTY.

Bliss, Frank W.	Santa Cruz.
Bliss, Chas. L.	Santa Cruz.
Butterfield, C. L.	Watsonville.
Gordon, Oscar L.	Santa Cruz.
Kirkpatrick, H. C.	Santa Cruz.
Lundy, E. A.	Santa Cruz.
Libbey, J. L.	Watsonville.
Swain, H. P.	Watsonville.

SAN BENITO COUNTY.

Cooper, Martin S.	Hollister.
Hendricks, John D.	Hollister.
Rubell, W. H.	Bitter Water.

SAN JOAQUIN COUNTY.

Burton, Frank	Stockton.
Davenport, A. C.	Stockton.
Fickett, S. H.	Stockton.
Goodell, S. E.	Stockton.
Ham, W. D.	Lodi.
Henderson, W. R.	Stockton.
Henderson, R. W.	Stockton.
Haines, N. J.	Stockton.
Meseroll, J. M.	Stockton.
Parsons, M. W.	Stockton.
Wallace, W. J.	Stockton.

SOLANO COUNTY.

Harding, W. C.	Suisun.
Moore, W. A.	Benicia.
Pendleton, B. F.	Vallejo.
Shaw, John F.	Vallejo.
Upchurch, N. B.	Vacaville.
Upham, F. F.	Dixon.
Voories, Geo. L.	Vallejo.
Wyatt, M. O.	Dixon.
Stanton, J. C.	Rio Vista.

SIERRA COUNTY.

Chapman, S. A.	Sierra City.
Douglas, G.	Downieville.
Gardiner, Thos. (diploma indorsed)	Downieville.
Porter, J. P.	Truckee.

SAN LUIS OBISPO COUNTY.

Brown, W. G.	San Luis Obispo.
Garrison, D. M.	San Luis Obispo.
Nelson, W. H.	San Luis Obispo.
Richey, Wm. S. (diploma indorsed)	San Luis Obispo.

SAN FRANCISCO COUNTY.

Adams, Q. L.	San Francisco.
Austin, H.	San Francisco.
Baynes, H. F. (diploma indorsed)	San Francisco.
Boyd, C. W.	San Francisco.
Bolton, Thos.	San Francisco.
Brewer, B. B.	San Francisco.
Beers, Barrett	San Francisco.
Birge, J. J.	San Francisco.
Blankman, Wm.	San Francisco.
Bunnell, E. F.	San Francisco.
Burns, O. B.	San Francisco.
Braisdell, John H.	San Francisco.
Burch, Maria A.	San Francisco.
Brown, A. V.	San Francisco.
Bush, Louis	San Francisco.
Bush, Chas. G. (diploma indorsed)	San Francisco.
Blake, A. E.	San Francisco.
Blondin, Arthur	San Francisco.
Blake, Chas. E.	San Francisco.
Bliss, F. A.	San Francisco.
Blood, J. N.	San Francisco.
Bloch, C.	San Francisco.
Bettis, Harry L.	San Francisco.
Boxton, C.	San Francisco.
Botsford, Geo. (diploma indorsed)	San Francisco.
Brewer, F. A.	San Francisco.

Brewer, I. J.	San Francisco.
Brown, W.	San Francisco.
Bryant, Wm. A. (diploma indorsed)	San Francisco.
Chalfant, S. P. (diploma indorsed)	San Francisco.
Caranza, V. A.	San Francisco.
Case, E. G. (examined by Board)	San Francisco.
Clark, Franklin L.	San Francisco.
Cogswell, James L.	San Francisco.
Croome, William	San Francisco.
Case, Chas. E.	San Francisco.
Clarke, W. H.	San Francisco.
Cranz, Louis F.	San Francisco.
Conwell, C. C.	San Francisco.
Cochrane, E. O.	San Francisco.
Cummings, J. E.	San Francisco.
Crossett, E. T.	San Francisco.
Craigie, Henry	San Francisco.
Cane, Alfred	San Francisco.
Conradt, J. H.	San Francisco.
Coulson, N. T. (diploma indorsed)	San Francisco.
Cahill, S. D.	San Francisco.
Crossett, Truman	San Francisco.
Currah, J. M.	San Francisco.
Card, Wm. H.	San Francisco.
Chase, Maurice	San Francisco.
Christopher, T.	San Francisco.
Christensan, G. A.	San Francisco.
Cutlar, R.	San Francisco.
Cool, W. P.	San Francisco.
Cassely, John P.	San Francisco.
Dennis, S. W.	San Francisco.
Dentler, Ed. F.	San Francisco.
Drucker, Wm. E.	San Francisco.
Decker, Chas. W.	San Francisco.
Duckett, C. S.	San Francisco.
Drucker, Geo. J.	San Francisco.
Dunbar, L. L.	San Francisco.
Davis, Henry C.	San Francisco.
Dyer, J. J.	San Francisco.
Dutch, Wm. *	San Francisco.
Dean, G. S.	San Francisco.
Dempster, James	San Francisco.
Dean, C. O.	San Francisco.
Davidson, Robt. (examined by Board)	San Francisco.
Esterle, Albert M. (diploma indorsed)	San Francisco.
Emerson, Ed. W.	San Francisco.
Edwards, Jas. W.	San Francisco.
Eisen, Ed. G.	San Francisco.
Fitzpatrick, W. E. (diploma indorsed)	San Francisco.
Fox, H. B.	San Francisco.
Ferguson, T. H.	San Francisco.
Fox, J. M.	San Francisco.
Fuller, C. H.	San Francisco.
Gore, Arthur	San Francisco.
Gorton, C. D.	San Francisco.
Goe, Sam'l E.	San Francisco.
Goddard, C. L.	San Francisco.
Gonzales, I. T.	San Francisco.
Gabbs, M. F.	San Francisco.
Griswold, W. F.	San Francisco.
Graves, W. L.	San Francisco.
Gunzburger, B. M.	San Francisco.
Griffiths, Allen	San Francisco.
George, E.	San Francisco.
Hofleng, Fred.	San Francisco.
Hardcastle, Geo.	San Francisco.
Hill, Alfred S.	San Francisco.
Hibbard, C. W.	San Francisco.
Heins, Julius	San Francisco.
Hatch, J. A.	San Francisco.
Hill, Albert B.	San Francisco.
Hill, Thos. L.	San Francisco.
Hill, Walter B.	San Francisco.
Haselhurst, A. O.	San Francisco.
Hill, Alfred L.	San Francisco.

Haines, B. W.	San Francisco.
Harrison, E. L.	San Francisco.
Hastings, Robert	San Francisco.
Iglehart, T. M.	San Francisco.
Jacobs, B. R.	San Francisco.
Jennin, E. L.	San Francisco.
Kauflung, Louis H.	San Francisco.
Knox, Henry E.	San Francisco.
King, L. A.	San Francisco.
Kemp, Van Eee, Fred.	San Francisco.
Knowles, S. E.	San Francisco.
King, W. J.	San Francisco.
Knowles, Wm. A.	San Francisco.
Knowlton, John S.	San Francisco.
Lord, F. F.	San Francisco.
Lubbock, W. C.	San Francisco.
Lee, L. A.	San Francisco.
Lundborg, J. A. W.	San Francisco.
Lightbody, H.	San Francisco.
Leek, Geo. W.	San Francisco.
Little, J. R.	San Francisco.
Lord, Mrs. C. B.	San Francisco.
Leek, J. G.	San Francisco.
Locke, C. W.	San Francisco.
Lord, C. C.	San Francisco.
Lawrence, Geo. O.	San Francisco.
Lightcap, Samuel E.	San Francisco.
Morffew, Thomas	San Francisco.
Moulton, Calvin R.	San Francisco.
Myers, Oliver P.	San Francisco.
Monroe, Geo. P.	San Francisco.
Maunder, Philip	San Francisco.
Moore, C.	San Francisco.
Morton, Henry R.	San Francisco.
McKenzie, A. W.	San Francisco.
Matthews, James	San Francisco.
Massie, H. C.	San Francisco.
Malech, T. G.	San Francisco.
Morton, H. R., Jr.	San Francisco.
Mancilla, Maguel	San Francisco.
Mendes, Chas.	San Francisco.
Neumann, L.	San Francisco.
Pierce, T. B.	San Francisco.
Price, W. E.	San Francisco.
Park, E. E.	San Francisco.
Peel, Jonathan	San Francisco.
Perry, Charles A.	San Francisco.
Prohl, R. B.	San Francisco.
Plomteaux, H. J.	San Francisco.
Porter, John S.	San Francisco.
Pratt, Frank E.	San Francisco.
Pancoast, Franklin	San Francisco.
Ralls, R. F.	San Francisco.
Rea, C. F.	San Francisco.
Rinebold, J. J.	San Francisco.
Remington, J. W.	San Francisco.
Rau, Henry	San Francisco.
Rietzke, Gustav	San Francisco.
Rankin, J. H.	San Francisco.
Richards, W. H.	San Francisco.
Richards, C. W.	San Francisco.
Robinson, W. H.	San Francisco.
Roberts, S. H.	San Francisco.
Rowand, Jas. T. (diploma indorsed)	San Francisco.
Sichel, G. W. (diploma indorsed)	San Francisco.
Schultz, E. H.	San Francisco.
Sublett, W. A.	San Francisco.
Swarzschild, F.	San Francisco.
Salmon, Wm.	San Francisco.
Switser, Anna	San Francisco.
Spear, Thos. R.	San Francisco.
Sylvester, H.	San Francisco.
Smith, M. E.	San Francisco.
Schneider, Joseph	San Francisco.
Simms, Chas.	San Francisco.

Sloat, Chas. F.	San Francisco.
Sullivan, J. P.	San Francisco.
Sichel, Max.	San Francisco.
Swain, E. M.	San Francisco.
Stevens, Henry H.	San Francisco.
Sanger, I.	San Francisco.
Spence, Stuart J.	San Francisco.
Sheets, H. Clay	San Francisco.
Sandford, L. N.	San Francisco.
Stanley, W. H.	San Francisco.
Sullivan, Maurice J.	San Francisco.
Savage, Henry	San Francisco.
Turner, H. C.	San Francisco.
Turner, W. A.	San Francisco.
Truman, H. G.	San Francisco.
Thrall, H. H.	San Francisco.
Troist, J. F.	San Francisco.
Thrautkill, Wm. O.	San Francisco.
Teague, L. A.	San Francisco.
Teague, Fred.	San Francisco.
Trumpour, J. P.	San Francisco.
Urmy, H. N.	San Francisco.
Verrinder, A. E. (diploma indorsed)	San Francisco.
Verrinder, R. F. (diploma indorsed)	San Francisco.
Van Orden, L.	San Francisco.
Vidaver, N. J.	San Francisco.
Van Crombrughe, A.	San Francisco.
Winter, J. W.	San Francisco.
Winter, W. G. (diploma indorsed)	San Francisco.
Wilson, C. H.	San Francisco.
Wilbert, J. L.*	San Francisco.
Wood, Andrew B.	San Francisco.
Warner, A.	San Francisco.
Wade, Thomas*	San Francisco.
Whitcomb, N. T.	San Francisco.
Young, H. G.	San Francisco.
Younger, W. J.	San Francisco.
Younger, Ed. A.	San Francisco.

* Deceased.

SONOMA COUNTY.

Biddle, E. W.	Healdsburg.
Caldwell, C. L.	Santa Rosa.
Cook, W. E.	Healdsburg.
Caldwell, F. M.	Santa Rosa.
Cole, Hiram	Santa Rosa.
Coomes, A. M.	Cloverdale.
Campbell, R. E. (examined by Board)	Healdsburg.
Eshbach, D. M.	Sonoma.
Galbraith, M. D. (diploma indorsed)	Cloverdale.
Huebner, O. C.	Healdsburg.
Krueger, O. F.	Healdsburg.
Lovejoy, S. E.	Petaluma.
Lovejoy, Geo. E.	Petaluma.
McLain, A. F.	Santa Rosa.
Perkins, C. O.	Petaluma.
Reed, Chas. W.	Santa Rosa.
Savage, C. W.	Santa Rosa.
Saul, Geo. M.	Santa Rosa.
Stone, John T.	Santa Rosa.
Wiley, J. N.	Santa Rosa.

SUTTER COUNTY.

Moore, J. E.	Live Oak.
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TRINITY COUNTY.

Spratt, C. W.	Weaverville.
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TUOLUMNE COUNTY.

Menendez, I. A.	Sonora.
Menendez, Henry	Sonora.

TEHAMA COUNTY.

Barrett, C. J.	Red Bluff.
Fuller, F. N.	Red Bluff.
Schorn, W. A.	Red Bluff.

TULARE COUNTY.

Asay, J. L.	Visalia.
Asay, C. E.	Visalia.
Cooper, E. M.	Visalia.
Hunsaker, G. W.	Tulare.
Key, T. B.	Tulare.
Martin, Todd	Tulare.

VENTURA COUNTY.

Hedrick, Lyman	San Buenaventura.
Stuart, S. L.	San Buenaventura.
Staire, J. M. (diploma indorsed)	San Buenaventura.

YOLO COUNTY.

Dick, A. N.	Woodland.
Holmes, L. B.	Woodland.
Hodgen, I.	Woodland.
Musselman, D.	Madison.

YUBA COUNTY.

Boyd, Geo. H.	Marysville.
Jewett, Stanley	Marysville.
Smith, J. B. M.	Marysville.
Walker, John D.	Hansonville.
Walker, Albin J.	Hansonville.

FOURTH ANNUAL REPORT

OF THE

BOARD OF DENTAL EXAMINERS

OF THE

STATE OF CALIFORNIA.



SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.
1888.

REPORT.

To his Excellency R. W. WATERMAN, Governor of the State of California :

SIR: The Board of Dental Examiners of the State of California submit the following as their fourth annual report of its proceedings, together with an account of all moneys received and disbursed, in compliance with the requirements of that certain Act of the Legislature, entitled "an Act to insure the better education of practitioners of dental surgery, and to regulate the practice of dentistry in the State of California," approved March 12, 1885, a copy of which is hereunto annexed.

Since issuing the last report, the Board has held seven meetings.

On May 16, 1888, Governor Waterman appointed on the Board W. F. Griswold, of San Francisco, vice E. W. Biddle, of Healdsburg, term expired, also S. E. Knowles, of San Francisco, vice C. W. Hibbard, of San Francisco, term expired.

At the meeting of October 16, 1888, nine candidates appeared for examination, seven of whom successfully passed. At this meeting the election of officers was held.

Thos. Morffew, D.D.S., of San Francisco, was elected President and Dr. W. F. Griswold, of San Francisco, was elected Secretary.

The following are the present officers and members of the Board:

Thos. Morffew, D.D.S., President.....	San Francisco.
W. J. Younger, M.D.....	San Francisco.
J. S. Crawford.....	Los Angeles.
S. E. Knowles, M.D., D.D.S.....	San Francisco.
J. J. Birge.....	San Francisco.
H. J. Plomteaux, D.D.S.....	San Francisco.
W. F. Griswold, Secretary.....	San Francisco.

During the past year two persons have been registered, thirty diplomas have been indorsed, and seven candidates have received certificates on examination.

A list of all whose names have been registered, and of all whose diplomas have been indorsed as satisfactory to the Board, and of all who have received certificates by examination of the Board, is hereto annexed.

The following is an account of all moneys received and disbursed by the Board since the last report:

RECEIPTS.

For registration, \$1 for each, two persons.....	\$2 00
Received from indorsements of diplomas. \$10 for each applicant, thirty applicants.....	300 00
From examination, \$10 from each applicant, ten applicants.....	100 00
Balance on hand at last report.....	105 95

\$507 95

DISBURSEMENTS.

Incidentals.....	\$35 00
Traveling expenses of members.....	47 00
Necessary clerical expenses.....	35 00
Rent of hall.....	105 00
Stationery.....	24 75
Printing.....	15 00

Total.....\$261 75

Balance in hand of Secretary.....\$246 20

All persons who are now practicing dentistry in this State, and who have not received a certificate from this Board, in pursuance of the Act mentioned, are violating the law, and are subject to arrest and a fine of \$50 to \$200, or imprisonment for six months in the county jail, for each and every offense.

It will be necessary for all persons who may hereafter desire to engage in the practice of dentistry in this State to secure a certificate from this Board, upon a diploma from a reputable dental college, or after examination in dental surgery, as required by the Act of March 12, 1885.

In examining applicants for certificates to practice dentistry, the Board will examine in the branches of anatomy, physiology, pathology, histology, hygiene, materia medica, therapeutics, chemistry, metallurgy, operative dentistry, prosthetic dentistry, and dental jurisprudence. All examinations must be in writing, and the applicant must receive a general average of seventy five per cent to entitle him to a certificate. The regular meeting for examinations of candidates will be held on the third Tuesday of August of each year.

It seems to be popularly supposed that the Board of Examiners should prosecute all persons violating the law. This is not the case; but it is the duty of every dentist to see that the law is enforced, and it is the duty of the prosecuting attorney of each county to prosecute every person violating the law, on the receipt of information of such violation, and the necessary evidence to establish the fact.

STEP TO BE TAKEN TO PROSECUTE.

Positive evidence of the violation of the law should first be obtained. This, with a formal information and list of witnesses, should be handed to the prosecuting attorney, who will then be in duty bound to prosecute the case.

The attention of licensees is called to the fact that they are required to have their licenses recorded with the County Clerk of the county in which such persons may reside; it requires no action of the Board to work a forfeiture of the license under Section 8 of the law; the fact of failure to have it recorded, within six months from date of issue, subjects licensee to the penalty for the neglect.

We recommend that Section 6 of the Dental Law be amended so that the informer of violations of the Act, "in cases of conviction," shall receive one half of the fine imposed.

The Board is more than ever impressed with the importance of legislation of this character, and have greater confidence that the judicious administration of the law under which they act must redound to the benefit of the community.

All of which is respectfully submitted. Board of Dental Examiners of the State of California.

THOS. MORFFEY, D.D.S., President.

W. F. GRISWOLD, Secretary.

December 1, 1888.

CHAPTER CXXVII.

An Act to Insure the Better Education of Practitioners of Dental Surgery, and to Regulate the Practice of Dentistry in the State of California.

[Approved March 12, 1885.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. It shall be unlawful for any person, who is not at the time of the passage of this Act engaged in the practice of dentistry in this State, to commence such practice unless he or she shall have obtained a certificate, as hereinafter provided.

SEC. 2. A Board of Examiners, to consist of seven practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this Act. The members of said Board shall be appointed by the Governor from the dental profession of the State at large. The term for which the members of said Board shall hold their office shall be four years, except that two of the members of the Board first to be appointed under this Act, shall hold their office for the term of one year, two for the term of two years, two for the term of three years, and one for the term of four years, respectively, and until their successors shall be duly appointed and qualified. In case of a vacancy occurring in said Board, such vacancy shall be filled by the Governor, in conformity with this section.

SEC. 3. Said Board shall choose one of its members President, and one the Secretary thereof, and it shall meet at least once in each year, and as much oftener and at such times and places as it may deem necessary. A majority of said Board shall, at all times, constitute a quorum, and the proceedings thereof shall, at all reasonable times, be open to public inspection.

SEC. 4. Within six months from the time this Act takes effect, it shall be the duty of every person who is now engaged in the practice of dentistry in this State to cause his or her name and residence or place of business to be registered with said Board of Examiners, who shall keep a book for that purpose. The statement of every such person shall be verified under oath before a Notary Public or Justice of the Peace, in such manner as may be prescribed by the Board of Examiners. Every person who shall so register with said Board as a practitioner of dentistry shall receive a certificate to that effect, and may continue practice as such without incurring any of the liabilities or penalties provided in this Act, and shall pay to the Board of Examiners for each registration a fee of one dollar. It shall be the duty of the Board of Examiners to forward to the County Clerk of each county in the State a certified list of the names of all persons residing in his county who have registered in accordance with the provisions of this Act, and it shall be the duty of all County Clerks to register such names in a book to be kept for that purpose.

SEC. 5. Any and all persons, who shall so desire, may appear before the Board at any of its regular meetings and be examined with reference to their knowledge and skill in dental surgery; and if the examination of any such person or persons shall prove satisfactory to said Board, the Board of Examiners shall issue to such persons as they shall find to possess the requisite qualifications, a certificate to that effect, in accordance with the provisions of this Act. Said Board shall also indorse as satisfactory diplomas from any reputable dental college, when satisfied of the character of such institution, upon the holder furnishing evidence satisfactory to the Board, of his or her right to the same, and shall issue certificates to that effect within ten days thereafter. All certificates issued by said Board shall be signed by its officers, and such certificates shall be prima facie evidence of the right of the holder to practice dentistry in the State of California.

SEC. 6. Any person who shall violate any of the provisions of this Act shall be deemed guilty of a misdemeanor, and, upon conviction, may be fined not less than fifty dollars nor more than two hundred dollars, or confined six months in the County Jail, for each and every offense. All fines recovered under this Act shall be paid into the Common School Fund of the county in which such conviction takes place.

SEC. 7. In order to provide the means for carrying out and maintaining the provisions of this Act, the said Board of Examiners shall charge each person applying to or appearing before them for examination for a certificate of qualifications, a fee of ten dollars, which fee shall be in no case returned; and out of the funds coming into the possession of the Board from the fees so charged, and penalties received under the provisions of this Act, all legitimate and necessary expenses incurred in attending the meetings of said Board shall be paid; and no part of the expenses of the Board shall ever be paid out of the State Treasury. All moneys received in excess of expenses above provided for shall be held by the Secretary of said Board as a special fund for meeting the expenses of said Board, and carrying out the provisions of this Act, he giving such bonds as the Board shall from time to time direct; and said Board shall make an annual report of its proceedings to the Governor by December first of each year, together with an account of all moneys received and disbursed by them pursuant to this Act.

SEC. 8. Any person who shall receive a certificate from said Board to practice dentistry, shall cause his or her certificate to be registered with the County Clerk of the county in which such person may reside, and the County Clerk shall charge for registering such certificates a fee of one dollar. Any failure, neglect, or refusal on the part of any person holding such certificate to register the same with the County Clerk as above directed, for a period of six months, shall work a forfeiture of the certificate; and no certificate, when once forfeited, shall be restored, except upon the payment to the said Board of twenty-five dollars as a penalty for such neglect, failure, or refusal.

SEC. 9. Any person who shall knowingly and falsely claim or pretend to have or hold a certificate of license, diploma, or degree, granted by any society organized under and pursuant to the provisions of this Act, or who shall falsely, and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section six.

SEC. 10. Nothing in this Act shall be so construed as to prohibit any practicing physician from extracting teeth.

SEC. 11. This Act shall take effect immediately.

OFFICIAL REGISTER

OF DENTISTS HOLDING CERTIFICATES FROM THE BOARD OF DENTAL
EXAMINERS IN THE STATE OF CALIFORNIA.

ALAMEDA COUNTY.

Beals, C. H.	Oakland.
Bills, Albert V. (diploma indorsed)	Oakland.
Bilfills, E. K.	Oakland.
Burnett, E. K.	Oakland.
Brooks, W. E.	Oakland.
Bishop, M. E.	Alameda.
Bates, C. P.	Berkeley.
Barradas, F. C.	San Leandro.
Bernard, Geo. * (diploma indorsed)	Livermore.
Cole, R. E.	Oakland.
Craig, W. H.	Oakland.
Carpenter, O.	Oakland.
Cool, R. H.	Oakland.
Cornwall, A.	Oakland.
Cool, G. W.	Oakland.
Danziger, G. A.	Oakland.
Demnick, J.	Oakland.
Dunn, R. K.	Oakland.
Edwards, B. F.	Oakland.
Gilman, S. M.	Oakland.
Garcia, M. J.	San Leandro.
Halsey, I. S.	Oakland.
Hall, T. W.	Oakland.
Hutton, J. A. D.	Berkeley.
Hempstead, J. E.	Oakland.
Hackett, S. A.	Oakland.
Kreichbaum, G. H.	Oakland.
Koshler, F.	Sunol.
Kenworthy, L.	San Leandro.
Lane, C. S.	Oakland.
Lee, E. W.*	East Oakland.
Luce, G. J.	Oakland.
Lane, Frederic James (diploma indorsed)	Oakland.
Meek, R. W.	Oakland.
Morris, A. H.	Oakland.
Morris, T. H.	Oakland.
Merriman, A. F.	Oakland.
Merriman, A. F., Jr.	Oakland.
Moulton, H. G. (examined by Board)	Oakland.
Petton, L. D.	Oakland.
Rodolph, C. F.	Oakland.
Rabe, J.	Oakland.
Stoakes, F. C.	San Leandro.
Simmons, W. H.	Oakland.
Schmidt, G. L.	Oakland.
Schumer, A. C.	Oakland.
Saxe, Frederick J. (diploma indorsed)	Oakland.
Savage, S. L.	Livermore.
Tate, S. P., Jr.	Oakland.
Titcomb, C. B.	Oakland.
Timerman, E. C. (diploma indorsed)	Oakland.
Wilson, O. F.	Oakland.
Waltz, G. W.	Oakland.
Walker, Charles Henry (examined by Board)	Oakland.

AMADOR COUNTY.

Gray, John	Ione.
Gabbs, E. J.	Sutter Creek.
La Due, W. K.	Plymouth.

BUTTE COUNTY.

Crum, T. A.	Chico.
McFadgen, A.	Chico.

* Deceased.

Norman, Geo. H.	Gridley.
Read, W. S.	Oroville.
Stewart, Robert (diploma indorsed)	Chico.
Vanaukin, J. R.	Chico.
Ward, S. T.	Chico.
Wasley, D. W.	Chico.

COLUSA COUNTY.

Ciley, J. L.	Little Stony.
Pirkey, M.	Willows.
Smith, Frank Z.	Colusa.
Washer, W. A.	Willows.

CONTRA COSTA COUNTY.

McCabe, Ed.	Brentwood.
Moore, J. S.	Martinez.
Moore, J. S., Jr.	Martinez.

CALAVERAS COUNTY.

Oviatt, S. M.	San Andreas.
Smith, C. D.	Angels Camp.
Turner, Peter T.	Murphys.

EL DORADO COUNTY.

Stone, W. W.	Placerville.
Tyson, Chas.	Placerville.
Walk, Chas. L.	Placerville.

FRESNO COUNTY.

Cooper, J. C.	Fresno.
Doyle, B. W.	Fresno.
Earle, George W. (diploma indorsed)	Selma.
Gardner, R. C. (diploma indorsed)	Fresno.
Hunsaker, A. L.	Fresno.
Hendricks, H. T.	Kingsburg.
Marcoux, Henry Frederick (diploma indorsed)	Fresno.
Prather, W. J.	Fresno.

HUMBOLDT COUNTY.

Beverton, D. H.	Eureka.
Ingersall, A. E.	Eureka.
Johnston, Robert (diploma indorsed)	Ferndale.
O'Connor, D. L.	Blocksburg.
Ray, C. B.	Arcata.
Thompson, R. P.	Ferndale.
Weldon, J. A.	Eureka.
Weldon, E. J.	Eureka.

KERN COUNTY.

Bonham, J. F.	Bakersfield.
Badgley, A. (examined by Board)	Bakersfield.

LOS ANGELES COUNTY.

Adams, S. H.	Los Angeles.
Bird, W. R.	Los Angeles.
Baldwin, C. V.	Los Angeles.
Burgess, R. F.	Santa Ana.
Bourne, Robert R. (diploma indorsed)	Los Angeles.
Cunningham, R. G.	Los Angeles.
Crawford, J. S.	Los Angeles.
Case, Isaac M. (diploma indorsed)	Pomona.
Carroll, H. H. (diploma indorsed)	Los Angeles.
Dunn, J. H.	Pomona.
French, L. W.	Los Angeles.
Harlan, C. N.*	Los Angeles.
Hubbell, A. B.	Los Angeles.
Hollingsworth, M. W.	Los Angeles.
Hollingsworth, J. W.	Los Angeles.
Hays, A. P. (diploma indorsed)	Los Angeles.
Hurt, J. M. (examined by Board)	Pomona.
Janes, R. K.	Pasadena.
Knepper, G. (examined by Board)	Los Angeles.

* Deceased.

Masser, W. H.	Los Angeles.
McCoy, John C.	Orange.
Millard, G. A.	Campton.
Morris, R. W. (diploma indorsed)	Los Angeles.
Menges, M. A. (diploma indorsed)	Santa Ana.
Nichols, E. A. (diploma indorsed)	Pasadena.
Palmier, Frank M.	Los Angeles.
Parker, C. H. (examined by Board)	Los Angeles.
Purnell, George E. (diploma indorsed)	Orange.
Stephens, Frank E.	Los Angeles.
Stephens, C.	Los Angeles.
Spinks, M. E.	Los Angeles.
Smith, Uriel	Los Angeles.
Shoemaker, R. H.	San Gabriel.
Small, H. E.	Los Angeles.
Swift, Theodore E. (diploma indorsed)	Los Angeles.
Tolhurst, S. H.	Los Angeles.
Tolhurst, G. W.	Los Angeles.
Todd, Baxter	Los Angeles.
Todd, Robert A. (diploma indorsed)	Los Angeles.
Vanderlip, John F.	Los Angeles.
Vanderlip, George G.	Santa Ana.
Von Bonhurst, C. G.	Santa Ana.
White, J. M.	Pomona.
Wells, L. W.	Los Angeles.
Wilder, D. R.	Los Angeles.
Young, John E.	Los Angeles.
	Santa Ana.

LAKE COUNTY.

Gilstrop, J. W.	Kelseyville.
Hutchins, J. M.	Lakeport.
Redmond, J. J.	Middletown.

LASSEN COUNTY.

Leonard, J. G.	Susanville.
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MARIN COUNTY.

Thomas, H. B.	San Rafael.
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MODOC COUNTY.

Camicia, L. S.	Lookout.
Epperson, J. H.	Alturas.
Taylor, J. M.	Alturas.

MENDOCINO COUNTY.

Card, Ira D.	Ukiah.
Fare, John	Westport.
Hoffman, M.	Ukiah.
Holmes, C. A.	Mendocino City.
Hogshead, W. H.	Ukiah.
Mitchell, Hiram H.	Ukiah.
Mitchell, Marting N.	Ukiah.
McCowan, G.	Ukiah.
Willsey, T. F.	Covelo.

MERCED COUNTY.

Prather, W. R.	Merced.
Wassman, Max	Merced.

MONTEREY COUNTY.

Barden, W. N.	Salinas.
Lemon, Geo. B.	Salinas.

NAPA COUNTY.

Davis, C. E.	St. Helena.
Farman, C. H.	Napa.
Hackett, F. M.	Napa.
Hackett, C. C.	Napa.
Key, J. W.	Calistoga.
Porter, E. M.	Napa.
Porter, S. P.	Napa.
Root, W. A.	St. Helena.
Sabin, C. R.	St. Helena.

NEVADA COUNTY.

Carr, G. B.	Grass Valley.
Chapman, A.	Nevada City.
Chapman, Mrs. N. E.	Nevada City.
Eastman, W. W.	Nevada City.
Hays, Irwin W.	Grass Valley.
Harris, S. M.	Grass Valley.
Harris, M. P. (diploma indorsed).	Grass Valley.
Lancaster, C. E.	North San Juan.
Martin, S. D.	Nevada City.
McIntyre, T. W.	Nevada City.
Pennington, A. R.	Nevada City.
Robinson, F. A.	Nevada City.
Relly, J. W.	Grass Valley.
Ward, S. T.	Nevada City.

PLUMAS COUNTY.

Cate, David B. (diploma indorsed).	Quincy.
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PLACER COUNTY.

Hitchcock, J. W. (examined by Board).	Auburn.
Hawver, J. C.	Auburn.
Newsom, G. W. (examined by Board).	Auburn.
Rea, John	Lincoln.
Smith, J. F.	Forest Hill.
Wilson, M. W.	Dutch Flat.
Ward, J. N. (examined by Board).	Newcastle.

STANISLAUS COUNTY.

Drullard, T. W.	Modesto.
Moad, V. R.	Modesto.
Preshaw, R. G.	Oakdale.

SACRAMENTO COUNTY.

Bates, B. F.	Folsom.
Gardner, Ed.	Sacramento.
Hornor, J. Van C.	Sacramento.
Light, W. W.	Sacramento.
Milliken, Chas. T. (diploma indorsed).	Sacramento.
Pierson, H. H.	Sacramento.
Reid, T. B.	Sacramento.
Shaw, I. G.	Sacramento.
Shields, F. M.	Sacramento.
Stephenson, C. H.	Sacramento.
Southworth, S. S.	Sacramento.
Southworth, E. L. (diploma indorsed).	Sacramento.
Tebbets, Frank F.	Sacramento.
Wood, Wm.	Sacramento.

SISKIYOU COUNTY.

Hearn, F. G.	Yreka.
Lorrison, Chas. H.	Yreka.
Remington, C. L. (diploma indorsed).	Yreka.
Millbery, Arthur H.	Jordan.

SHASTA COUNTY.

Gleaves, A. D.	Anderson.
Hartman, Wm. P.	Shasta City.
La Bar, W. H.	Shasta City.
Manchester, M. R.	Redding.
Tope, John H.	Redding.

SAN DIEGO COUNTY.

Barnes, F. J.	San Diego.
Cave, D.	San Diego.
Coomes, F. E.	San Diego.
Cogswell, Thos. (diploma indorsed).	El Cajon.
Gould, H. W.	San Diego.
Gildea, Bernard M. (diploma indorsed).	San Diego.
Goodearle, J. H. (diploma indorsed).	Elsinore.
Glidden, Miles D. (diploma indorsed).	National City.
Harbison, H. R. (diploma indorsed).	San Diego.
Hurd, Edgar L. (diploma indorsed).	San Diego.

Leonard, C. N. (diploma indorsed)	National City.
Matthews, E. S. (diploma indorsed)	San Diego.
Merrill, Alfred P. (diploma indorsed)	San Diego.
Phillips, R. F.	San Diego.
Parker, D. G. (diploma indorsed)	West Fall Brook.
Price, J. T. (diploma indorsed)	San Jacinto.
Townsend, E. L. (diploma indorsed)	San Diego.
Wasson, John B. (diploma indorsed)	San Diego.

SAN BERNARDINO COUNTY.

Bedford, L. N. (diploma indorsed)	San Bernardino.
Bogart, S. C.	San Bernardino.
Musselman, S.	Cucamonga.
Packard, Chas. W.	Riverside.
Roso, Charles G. (diploma indorsed)	Riverside.
Sylvester, C. W.	Riverside.
Whitlock, Alma	San Bernardino.
Westover, G. C.	Riverside.

SANTA BARBARA COUNTY.

Daulton, G. H.	Santa Barbara.
Dimock, H. C.	Lompoc.
Edmonds, J. H. (diploma indorsed)	Santa Barbara.
Lee, D. B.	Santa Barbara.
Livermore, Geo. W.	Santa Barbara.
Moore, H. W. (diploma indorsed)	Santa Barbara.
Quick, E. Payson (diploma indorsed)	Santa Barbara.
Shrewsbury, N.	Santa Barbara.
Stuffer, H. W.	Santa Barbara.
Van Winckel, H. M.	Santa Barbara.
Viall, George (diploma indorsed)	Santa Barbara.
Yates, Lorenzo G.	Santa Barbara.

SAN MATEO COUNTY.

Decker, John H.	San Mateo.
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SANTA CLARA COUNTY.

Argall, Frank L.	San José.
Barker, Albert M.	San José.
Brigham, K. A.	Gilroy.
De Crow, Warren	San José.
Finnigan, L.	San José.
Fleming, C. K.	San José.
Fisher, Mrs. Minnie.	San José.
Gallup, Thomas E.	Santa Clara.
Gaston, W. A.	San José.
Gaston, A. A. (examined by Board)	San José.
Gothard, J. T.	Los Gatos.
Higgins, C. R.	Mountain View.
Hooker, A. O.	San José.
Hall, E. C.	San José.
Holmes, Stephen	San José.
King, J. T.	San José.
Klein, N.	San José.
Knapp, A. R.	San José.
Kingsbury, William B.	Santa Clara.
Lidyard, F. R.	San José.
Nevins, George F. (diploma indorsed)	San José.
Rogers, E. P.	Gilroy.
Rhodes, S. R.	San José.
Rogers, F. S.	Gilroy.
Sprake, W. T.	San José.
Spaw, C. R.	San José.
Whipple, T. S.	San José.

SANTA CRUZ COUNTY.

Bliss, Frank H.	Santa Cruz.
Bliss, Chas. L.	Santa Cruz.
Butterfield, C. L.	Watsonville.
Gordon, Oscar L.	Santa Cruz.
Kirkpatrick, H. C.	Santa Cruz.
Lundy, E. A.	Santa Cruz.
Libbey, J. L.	Watsonville.

Lewis, Walter F. (examined by Board).....	Santa Cruz.
Parker, James P. (diploma indorsed).....	Santa Cruz.
Swain, H. P.	Watsonville.

SAN BENITO COUNTY.

Cooper, Martin S.	Hollister.
Hendricks, John D.	Hollister.
Rubell, W. H.	Bitter Water.

SAN JOAQUIN COUNTY.

Burton, Frank.....	Stockton.
Davenport, A. C.	Stockton.
Fickett, S. H.	Stockton.
Goodell, S. E.	Stockton.
Ham, W. D.	Lodi.
Henderson, R. W.	Stockton.
Haines, N. J.	Stockton.
Henderson, W. R.	Stockton.
Meseroll, J. M.	Stockton.
Parsons, M. W.	Stockton.
Wallace, W. J.	Stockton.

SOLANO COUNTY.

Harding, W. C.	Suisun.
Moore, W. A.	Benicia.
Pendleton, B. F.	Vallejo.
Shaw, John T.	Vallejo.
Upchurch, N. B.	Vacaville.
Upham, F. F.	Dixon.
Voories, Geo. L.	Vallejo.
Wyatt, M. O.	Dixon.
Stanton, J. C.	Rio Vista.

SIERRA COUNTY.

Chapman, S. A.	Sierra City.
Douglas, G.	Downieville.
Gardiner, Thos. (diploma indorsed).....	Downieville.
Porter, J. P.	Truckee.

SAN LUIS OBISPO COUNTY.

Brown, W. G.	San Luis Obispo.
Garrison, D. M.	San Luis Obispo.
Nelson, W. H.	San Luis Obispo.
Richey, Wm. S. (diploma indorsed).....	San Luis Obispo.

SAN FRANCISCO COUNTY.

Adams, Q. L.	San Francisco.
Austin, H.	San Francisco.
Baynes, H. F. (diploma indorsed).....	San Francisco.
Boyd, C. W.	San Francisco.
Bolton, Thos.	San Francisco.
Brewer, B. B.	San Francisco.
Beers, Barrett	San Francisco.
Birge, J. J.	San Francisco.
Blankman, Wm.	San Francisco.
Burnell, E. F.	San Francisco.
Burns, O. B.	San Francisco.
Braidsdell, John H.	San Francisco.
Burch, Maria A.*	San Francisco.
Brown, A. V.	San Francisco.
Bush, Louis.	San Francisco.
Bush, Chas. G. (diploma indorsed).....	San Francisco.
Blake, A. E.	San Francisco.
Blondin, Arthur.	San Francisco.
Blake, Chas. E.	San Francisco.
Bliss, F. A.	San Francisco.
Blood, J. N.	San Francisco.
Bloch, C.	San Francisco.
Bettis, Henry L.	San Francisco.
Boxton, C.	San Francisco.
Botsford, Geo. (diploma indorsed).....	San Francisco.
Brewer, F. A.	San Francisco.
Brewer, L. J.	San Francisco.
Brown, W.	San Francisco.

Bryant, Wm. A. (diploma indorsed)	San Francisco.
Brooks, Frank A. (examined by Board)	San Francisco.
Boys, Henry S. (examined by Board)	San Francisco.
Chalfant, S. P. (diploma indorsed)	San Francisco.
Caranza, V. A.	San Francisco.
Case, E. G. (examined by Board)	San Francisco.
Clark, Franklin L.	San Francisco.
Cogswell, James L.	San Francisco.
Croome, William	San Francisco.
Case, Chas. E.	San Francisco.
Clarke, W. H.	San Francisco.
Cranz, Louis F.	San Francisco.
Conwell, C. C.	San Francisco.
Cockrane, E. O.	San Francisco.
Cummings, J. E.	San Francisco.
Crossett, E. J.	San Francisco.
Craigie, Henry	San Francisco.
Cane, Alfred	San Francisco.
Conradt, J. N.	San Francisco.
Coulsen, N. T. (diploma indorsed)	San Francisco.
Cahill, S. D.	San Francisco.
Crossett, Truman	San Francisco.
Currah, J. M.	San Francisco.
Card, Wm. H.	San Francisco.
Chase, Maurice	San Francisco.
Christopher, T.	San Francisco.
Cutlar, R.	San Francisco.
Cool, W. P.	San Francisco.
Casselly, John P.	San Francisco.
Case, George A.	San Francisco.
Dennis, S. W.	San Francisco.
Dentler, Edward F.	San Francisco.
Drucker, William E.	San Francisco.
Decker, Charles W.	San Francisco.
Duckett, C. S.	San Francisco.
Drucker, George J.	San Francisco.
Dunbar, L. L.	San Francisco.
Davis, Henry C.	San Francisco.
Dyer, J. J.	San Francisco.
Dutch, William*	San Francisco.
Dean, G. S.	San Francisco.
Dempster, James	San Francisco.
Dean, C. O.	San Francisco.
Davidson, Robert (examined by Board)	San Francisco.
Dunn, Martin J. (diploma indorsed)	San Francisco.
Esterle, Albert M. (diploma indorsed)	San Francisco.
Emerson, Ed. W.	San Francisco.
Edwards, James W.	San Francisco.
Eisen, Ed. J.	San Francisco.
Fitzpatrick, W. E. (diploma indorsed)	San Francisco.
Fox, H. B.	San Francisco.
Ferguson, T. H.	San Francisco.
Fox, J. M.	San Francisco.
Fuller, C. H.	San Francisco.
Gore, Arthur	San Francisco.
Gorton, C. D.	San Francisco.
Goe, Samuel E.	San Francisco.
Goddard, C. L.	San Francisco.
Gonzales, J. T.	San Francisco.
Gabbs, M. F.	San Francisco.
Griswald, W. F.	San Francisco.
Graves, W. L.	San Francisco.
Gunzburger, B. M.	San Francisco.
Griffiths, Allen	San Francisco.
George, E.	San Francisco.
Hofleng, Fred	San Francisco.
Hardcastle, Geo.	San Francisco.
Hill, Alfred S.	San Francisco.
Hibbard, C. W.	San Francisco.
Heins, Julius	San Francisco.
Hatch, J. H.	San Francisco.
Hill, Albert B.	San Francisco.
Hill, Thos. L.	San Francisco.

* Deceased.

Hill, Walter B.	San Francisco.
Haselhurst, A. O.	San Francisco.
Hill, Alfred L.	San Francisco.
Haines, B. W.	San Francisco.
Harrison, E. L.	San Francisco.
Hastings, Robert	San Francisco.
Iglehart, T. N.	San Francisco.
Jacobs, B. R.	San Francisco.
Jennin, E. L.	San Francisco.
Kauffung, Louis H.	San Francisco.
Knox, Henry E.	San Francisco.
King, L. A.	San Francisco.
Kemp, Van Eee Fred	San Francisco.
Knowles, S. E.	San Francisco.
King, W. J.	San Francisco.
Knowles, Wm. A.	San Francisco.
Knowlton, John S.	San Francisco.
Lord, F. S.	San Francisco.
Lubbock, W. C.	San Francisco.
Lee, L. A.	San Francisco.
Landborg, J. A. W.	San Francisco.
Lightbody, H.	San Francisco.
Leek, Geo. W.	San Francisco.
Little, J. R.	San Francisco.
Lord, Mrs. C. B.	San Francisco.
Leek, J. G.	San Francisco.
Locke, C. W.	San Francisco.
Lord, C. C.	San Francisco.
Lawrence, Geo. O.	San Francisco.
Lightcap, Samuel E.	San Francisco.
Morffew, Thomas	San Francisco.
Moulton, Calvin B.	San Francisco.
Myers, Oliver P.	San Francisco.
Monroe, Geo. P.	San Francisco.
Maunder, Philip	San Francisco.
Moore, C.	San Francisco.
Morton, Henry R.	San Francisco.
McKenzie, A. W.	San Francisco.
Matthews, James	San Francisco.
Massie, H. C.	San Francisco.
Malech, T. G.	San Francisco.
Morton, H. R., Jr.	San Francisco.
Mancilla, Maguel	San Francisco.
Mendes, Chas.	San Francisco.
Maldonado, E. (diploma indorsed)	San Francisco.
McDonald, Geo. W. (diploma indorsed)	San Francisco.
Neumann, L.	San Francisco.
Pierce, T. B.	San Francisco.
Price, W. E.	San Francisco.
Park, E. E.	San Francisco.
Peel, Jonathan M.	San Francisco.
Perry, Charles A.	San Francisco.
Prohl, R. B.	San Francisco.
Plomteaux, H. J.	San Francisco.
Porter, John S.	San Francisco.
Pratt, Frank E.	San Francisco.
Pancoast, Franklin	San Francisco.
Pugsley, Sanford (diploma indorsed)	San Francisco.
Ralls, R. F.	San Francisco.
Rea, C. F.	San Francisco.
Rinebold, J. J.	San Francisco.
Remington, J. W.	San Francisco.
Rau, Henry	San Francisco.
Rietzke, Gustav	San Francisco.
Rankin, J. H.	San Francisco.
Richards, C. W.	San Francisco.
Richards, W. H.	San Francisco.
Robinson, W. H.	San Francisco.
Roberts, S. H.	San Francisco.
Rowand, James T. (diploma indorsed)	San Francisco.
Sichel, G. W. (diploma indorsed)	San Francisco.
Schultz, E. H.	San Francisco.
Sublett, W. A.	San Francisco.
Swarzchild, F.	San Francisco.
Salmon, William	San Francisco.

Switser, Anna	San Francisco.
Spear, Thomas R.	San Francisco.
Sylvester, H.	San Francisco.
Smith, M. E.	San Francisco.
Schneider, Joseph	San Francisco.
Simms, Charles	San Francisco.
Sloat, Charles F.	San Francisco.
Sichel, Max	San Francisco.
Swain, E. M.	San Francisco.
Stevens, Henry H.	San Francisco.
Sanger, I.	San Francisco.
Spence, Stuart J.	San Francisco.
Sheets, H. Clay	San Francisco.
Sandford, L. N.	San Francisco.
Stanley, W. H.	San Francisco.
Sullivan, Maurice J.	San Francisco.
Savage, Henry	San Francisco.
Turner, H. C.	San Francisco.
Turner, W. A.	San Francisco.
Truman, H. G.	San Francisco.
Thrall, H. H.	San Francisco.
Traist, J. F.	San Francisco.
Thrailkill, Wm. O.	San Francisco.
Teague, L. A.	San Francisco.
Teague, Fred.	San Francisco.
Trumpour, J. P.	San Francisco.
Urmy, H. N.	San Francisco.
Verrinder, A. E. (diploma indorsed)	San Francisco.
Verrinder, R. F. (diploma indorsed)	San Francisco.
Van Ordan, L.	San Francisco.
Vidaver, N. J.	San Francisco.
Van Crombrughe, A.	San Francisco.
Winter, J. W.	San Francisco.
Winter, W. G. (diploma indorsed)	San Francisco.
Wilson, C. H.	San Francisco.
Wilbert, J. L.*	San Francisco.
Wood, Andrew B.	San Francisco.
Warner, A.	San Francisco.
Wade, Thomas*	San Francisco.
Whitcomb, N. T.	San Francisco.
Young, H. G.	San Francisco.
Younger, W. J.	San Francisco.
Younger, Ed. A.	San Francisco.

SONOMA COUNTY.

Anderson, David P. (examined by Board)	Santa Rosa.
Biddle, E. W.	Healdsburg.
Caldwell, C. L.	Santa Rosa.
Cook, W. E.	Healdsburg.
Caldwell, F. M.	Santa Rosa.
Cole, Hiram	Santa Rosa.
Coomes, A. M.	Cloverdale.
Campbell, R. E. (examined by Board)	Healdsburg.
Eshbach, D. M.	Sonoma.
Galbraith, M. D. (diploma indorsed)	Cloverdale.
Huebner, O. C.	Healdsburg.
Jones, Herold McKean (diploma indorsed)	Cloverdale.
Krueger, O. F.	Healdsburg.
Lovejoy, S. E.	Petaluma.
Lovejoy, George E.	Petaluma.
McLain, A. F.	Santa Rosa.
Perkins, C. O.	Petaluma.
Reed, Chas. W.	Santa Rosa.
Savage, C. W.	Santa Rosa.
Saul, George M.	Santa Rosa.
Stone, John T.	Santa Rosa.
Wiley, J. N.	Santa Rosa.

SUTTER COUNTY.

Moore, J. E.	Live Oak.
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TRINITY COUNTY.

Spratt, C. W.	Weaverville.
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*Deceased.

TUOLUMNE COUNTY.

Menendez, I. A.	Sonora.
Menendez, Henry	Sonora.

TEHAMA COUNTY.

Barrett, C. J.	.....	Red Bluff.
Fuller, F. A.	.....	Red Bluff.
Sehorn, W. A.	.....	Red Bluff.

TULARE COUNTY.

Asay, J. L.	.....	Visalia.
Asay, C. E.	.....	Visalia.
Boone, Nathaniel J. (diploma indorsed)	.....	Traver.
Cooper, E. M.	.....	Visalia.
Hunsaker, G. W.	.....	Tulare.
Key, T. B.	.....	Tulare.
Martin, Todd	.....	Tulare.

VENTURA COUNTY.

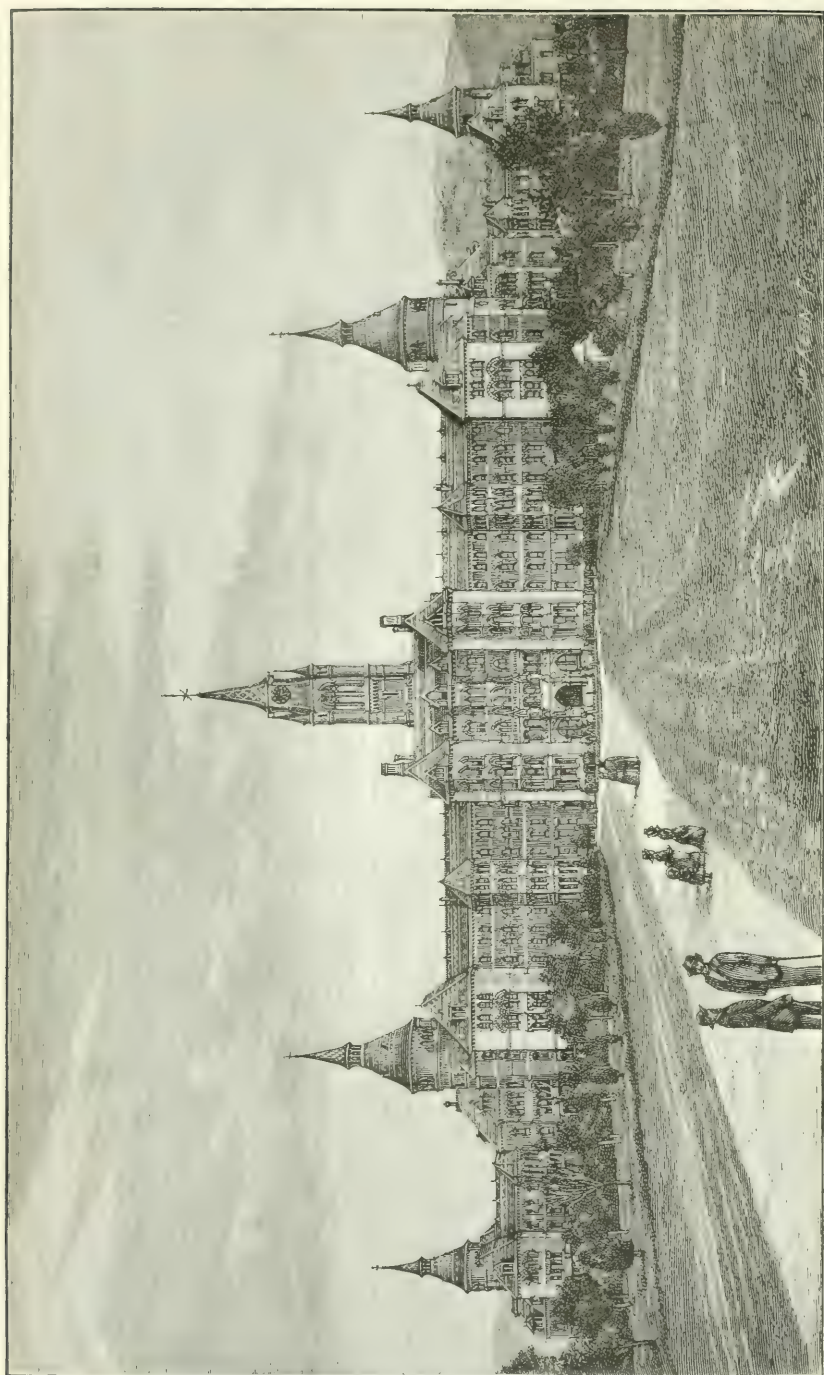
Hedrick, Lyman	.....	San Buenaventura.
Stuart, S. L.	.....	San Buenaventura.
Staire, J. M. (diploma indorsed)	.....	San Buenaventura.

YOLO COUNTY.

Dick, A. N.	.....	Woodland.
Holmes, L. B.	.....	Woodland.
Hodgen, I.	.....	Woodland.
Musselman, D.	.....	Madison.

YUBA COUNTY.

Boyd, Geo. H.	.....	Marysville.
Jewett, Stanley	.....	Marysville.
Smith, J. B. N.	.....	Marysville.
Walker, John D.	.....	Hansonville.
Walker, Albin J.	.....	Hansonville.



BIENNIAL REPORT OF THE TRUSTEES

AND THE

TWELFTH AND THIRTEENTH ANNUAL REPORTS

OF THE

RESIDENT PHYSICIAN

OF THE

NAPA STATE ASYLUM FOR THE INSANE.

1888.



SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.

1888.

OFFICERS OF THE ASYLUM.

BOARD OF TRUSTEES.

BENJAMIN SHURTLEFF, President.....	Napa.
J. C. MARTIN	Oakland.
J. Q. BROWN.....	Sacramento.
G. N. CORNWELL	Napa.
J. F. LAMDIN	Napa.

TREASURER AND EX OFFICIO SECRETARY.

C. B. SEELEY	Napa.
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RESIDENT OFFICERS.

E. T. WILKINS, M.D.	Resident Physician.
L. F. DOZIER, M.D.....	Assistant Physician.
F. W. HATCH, M.D.	Assistant Physician.
J. W. ROBERTSON, M.D.....	Assistant Physician.
J. B. STEVENS	Private Secretary.
J. M. PALMER.....	Steward.
MRS. JENNIE HAWKES	Matron.
J. E. STANSBURY	Steward's Clerk.
JOHN HAWKES	Supervisor.
ELIZA KENNEDY	Supervisoress.
W. H. MARTIN	Druggist.

REPORT.

To his Excellency ROBERT W. WATERMAN, Governor of the State of California:

As directed by law, the Board of Trustees of the Napa State Asylum for the Insane respectfully submits a report of the financial and general condition of the institution for the two fiscal years ending with the thirtieth of June, 1888.

The Board also makes such recommendations as it deems are clearly in the interest of the asylum.

It is with regret that we have to report a deficiency for the last fiscal year, in the sum of \$20,569 47.

The cutting down of the carefully computed estimate of the Resident Physician, for maintenance for the two fiscal years ending with the thirtieth day of June, 1889, by the last Legislature, from \$408,800 to an appropriation of only \$380,000, together with the failure of the California Hospital for the Chronic Insane, at Agnew, to be in readiness to receive the contemplated two hundred patients from this asylum, made a deficiency inevitable.

The balance of \$169 78—remaining in the maintenance fund at the close of the last fiscal year, as shown by the Treasurer's report, herewith submitted—was awaiting the presentation of outstanding claims allowed on the fund. Vouchers for all expenditures are on file in the office of the Treasurer, except those for the contingent fund, which are filed in the office of the Resident Physician.

The following statement shows the receipts and expenditures, on account of the contingent fund, for the two fiscal years ending June 30, 1888:

To balance June 30, 1886.....	\$8,139 85
To amount received for board	19,347 50
To amount received for Steward's sales.....	4,001 43
To rebate on lumber	3 65
	<hr/> \$31,492 43

Expenditures.

Painting materials and labor.....	\$3,640 41
Books and papers	182 90
Hardware.....	478 74
Waterworks	2,118 55
Fire and garden hose.....	828 70
Repairs	760 25
Improvement of grounds.....	2,047 50
Cartmen	900 00
Blasting powder and fuse	434 77
Lumber	533 47
Water pipe and castings.....	3,532 01
Brick, lime, and cement	870 58
Interest	2,171 77
Rent of telephone	100 00
Returned to pay patients.....	835 00
Trees and shrubs.....	240 55
Gasworks	668 45
Pasturage	240 00
Insurance on boilers	222 81
Freight.....	198 65
Construction of cow barn.....	1,430 37

Carried forward.....\$22,495 48

Brought forward.....	\$22,495 48
Horses.....	200 00
Building sheds.....	801 71
Asphaltum pavements.....	2,039 53
Water motor.....	330 18
Mangle house.....	228 00
Lithograph of asylum.....	00 00
Boilers.....	1,069 43
Pig lead.....	82 40
Coal bin.....	814 25
Surveying.....	13 50
Blacksmith shop.....	585 10
Pathological instruments.....	155 10
	<hr/> \$28,874 68
To balance June 30, 1888.....	\$2,617 75

The receipts for this fund during the two fiscal years ending with June 30, 1888, amounted to \$23,353 58, against \$25,312 12 for the two fiscal years ending with June 30, 1886, showing a falling off of \$1,960 54.

At the stated meeting in August, 1887, the Board, under authority of a law passed by the last Legislature, elected Dr. John W. Robertson, of Crescent City, to the office of Third Assistant Physician for this asylum, with a compensation of \$2,100 a year. Dr. Robertson displays a considerable interest in the department assigned him, and discharges the duties of his office with marked ability.

As a part of this communication we include the valuable, instructive report of the Resident Physician, Dr. E. T. Wilkins. The Board most respectfully calls your attention to his report, as it gives a full detailed account of asylum affairs for the two fiscal years recently closed, and abounds in practical suggestions and recommendations relative to the future management and welfare of the institution.

The number of patients in the asylum June 30, 1888, was one thousand four hundred and sixty-nine. The daily per capita cost for the fiscal year ending June 30, 1887, was $37\frac{1}{3}$ cents; for the last fiscal year it was $39\frac{1}{3}$ cents.

Since our last biennial report necessary improvements on the asylum and the premises connected therewith have been made, commensurate with the limited funds in our hands available for such purpose. Maple floors have been laid in eleven of the thirty-one wards of the building. By raising the dam of the fire protection reservoir six feet, its capacity has been increased to two million gallons. As completed, the value of this improvement is incalculable. With the prompt, efficient action of the well disciplined asylum hose company, it has already saved the institution from a terrible conflagration. The capacity of the other two reservoirs has also been vastly enlarged.

A large, convenient barn has been built, while many other needful improvements have been made, which are fully described in the ample report of the Resident Physician.

We respectfully ask the Legislature to pass a law to prohibit the commitment and admission of criminal insane persons to the State asylums and hospitals for the insane. There is a moral obliquity, a subtle viciousness in the criminal insane that renders them unfit companions or associates for the innocent, respectable insane. The States of New York and Michigan have special asylums for the exclusive use of the criminal insane, a wise, humane policy that commends itself to the serious consideration of the people of California.

We again earnestly implore the Legislature to make an appropriation for establishing infirmaries, where the more feeble and sick patients may

be removed from the noisy and tumultuous wards, and receive proper care and treatment.

The increase of the number of insane persons, from the rapid increase of the population of the State, will render the anticipated relief from the California Hospital for the Chronic Insane to this asylum but little, and only temporary.

While such quiet, retired departments are needful in all asylums for the insane, in an institution as large and crowded as the Napa Asylum, they become an imperative necessity.

Very respectfully,

BENJAMIN SHURTLEFF,
President.

J. C. MARTIN,
J. Q. BROWN,
GEO. N. CORNWELL,
J. F. LAMDIN,
Trustees.

SEPTEMBER 8, 1888.

TREASURER'S REPORT.

To the honorable Board of Trustees of the Napa State Asylum for the Insane:

GENTLEMEN: I herewith present my report as Treasurer of said asylum for the fiscal years ending June 30, 1887, and June 30, 1888, on account of "Maintenance." Vouchers are in office for all moneys paid out:

THE TREASURER IN ACCOUNT WITH MAINTENANCE FUND FOR THE FISCAL YEAR ENDING JUNE 30, 1887.

Receipts.

Balance on hand per last report.....	\$11,599 64
Received from the State for July, 1886.....	15,152 01
Received from the State for August, 1886.....	15,618 90
Received from the State for September, 1886.....	14,606 45
Received from the State for October, 1886.....	15,666 78
Received from the State for November, 1886.....	16,700 60
Received from the State for December, 1886.....	17,847 54
Received from the State for January, 1887.....	16,882 99
Received from the State for February, 1887.....	15,497 64
Received from the State for March, 1887.....	16,142 18
Received from the State for April, 1887.....	16,485 74
Received from the State for May, 1887.....	18,127 40
Received from the State for June, 1887.....	15,365 89

Total receipts	\$205,693 76
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Expenditures.

Paid out on orders of the Board of Trustees.....	\$193,548 56
Balance on hand	\$12,145 20

THE TREASURER IN ACCOUNT WITH MAINTENANCE FUND FOR THE FISCAL YEAR ENDING JUNE 30, 1888.

Receipts.

Balance on hand per last report.....	\$12,145 20
Received from the State for July, 1887.....	16,989 02
Received from the State for August, 1887.....	15,951 65
Received from the State for September, 1887.....	17,101 38
Received from the State for October, 1887.....	16,280 15
Received from the State for November, 1887.....	18,615 38
Received from the State for December, 1887.....	19,384 79
Received from the State for January, 1888.....	19,473 05
Received from the State for February, 1888.....	16,672 98
Received from the State for March, 1888.....	18,583 92
Received from the State for April, 1888.....	17,980 90
Received from the State for May, 1888.....	12,966 90

Total receipts	\$202,145 32
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Expenditures.

Paid out on orders of the Board of Trustees.....	\$201,975 34
Balance on hand	\$169 98

Respectfully submitted.

C. B. SEELEY, Treasurer.

NAPA, August 14, 1888.

REPORT OF THE RESIDENT PHYSICIAN.

To the honorable Board of Trustees of the Napa State Asylum for the Insane:

GENTLEMEN: For the first time in the history of this asylum a deficiency in our finances has to be reported. This is anomalous, and though its explanation properly belongs in the report of the Board of Trustees, my knowledge of the causes that produced it must be my excuse for calling your attention to them.

In my report for the year ending June 30, 1886, it was shown that we commenced the fiscal year 1886-7 with one thousand four hundred and thirty-six patients, and on page 16 said: "As it is not probable our numbers will greatly decrease during the next two years, I think it would be unwise to ask for a less sum for 1887-8 than had been appropriated by the Legislature for maintenance for the years 1885-6, viz., \$408,800."

Notwithstanding this request, it was contended that the California Hospital for the Chronic Insane, at Agnew, in Santa Clara County, would relieve the asylums at Stockton and Napa of two hundred patients each by the first of July, and certainly not later than the first of October, 1887; and upon this hypothesis the amount for which we asked was reduced from \$408,800 to \$380,000; and that for the asylum at Stockton was correspondingly curtailed. An appropriation of \$134,000 was made, however, to maintain two hundred patients from Napa and two hundred from Stockton, from the first day of October until the thirtieth of June, 1889. It will thus be seen that the failure to get the looked-for and promised relief from the Agnew Hospital, and the failure of the Legislature to give the asked-for appropriation, have been the causes of the deficiency in our finances. Yet, strange to say, the money appropriated to maintain these identical patients is locked up in the State Treasury, while they are being supported at Stockton and Napa upon credit.

In conclusion I most respectfully suggest, if there be any law on the statute books that prevents a beneficiary of this State from receiving the money appropriated by the Legislature for his maintenance, because he still lives in an old house, while a new one is being built for his reception, it should at once be amended or repealed.

ANNUAL SUMMARY.

The following summary exhibits the number of patients in the asylum June 30, 1887, number admitted, number under care and treatment, number discharged, eloped, and died during the year, and the number remaining in the asylum June 30, 1888:

FROM JUNE 30, 1887, TO JUNE 30, 1888.	Males.	Females.	Total.
Number of patients June 30, 1887.....	877	577	1,454
Number admitted during the year.....	233	122	355
Number under care and treatment.....	1,110	699	1,809
Number discharged, recovered.....	64	22	86
Number discharged, improved.....	62	43	105
Number discharged, unimproved.....	5	8	13
Number discharged, not insane.....	5	3	8
Number died.....	79	38	117
Number eloped.....	11	.....	11
Discharged, died, and eloped.....	226	114	340
Number remaining June 30, 1888.....	884	585	1,469

From the above summary it will be seen that we commenced the year with one thousand four hundred and fifty-four patients: received three hundred and fifty-five; number under care and treatment, one thousand eight hundred and nine; discharged, cured and improved, one hundred and ninety-one; unimproved, thirteen; not insane, eight; died, one hundred and seventeen; eloped, eleven men; remaining June 30, 1888, one thousand four hundred and sixty-nine.

The appropriation for maintaining the asylum was made upon a basis of one thousand three hundred patients at 40 cents per capita per day; and as we begin the year with one hundred and sixty-nine in excess of this number, unless we can reduce it to an average of one thousand three hundred during the year, we must necessarily have a deficiency this year also.

The per capita cost last year was $39\frac{2}{10}$ cents, but the difference in the price of coal alone, under the present contract, will surely run it up to 40 cents per day. But I trust we will get some relief from Agnew before the Legislature meets, when we will be able to form a more correct idea of the number of patients we will probably have, and the amount necessary for their maintenance during the next two years.

APPROPRIATIONS NEEDED.

In addition to the appropriation for maintenance, provision should be made for the construction of two infirmaries. We have been persistently asking for these very important, if not necessary, adjuncts to this asylum for the last ten years, and will keep it before the Legislature so long as it continues to be our duty to call attention to the needs of this asylum. There is no place in this asylum where the sick and bed-ridden patient, man or woman, can be comfortably kept, and properly treated, outside of a ward of noisy patients and disturbing elements; no place where a relative or friend can spend a few days, and be present during the last hours of a distressing illness; no room properly constructed and suitably arranged for performing the most delicate and difficult surgical operations; and we feel that this should not be truthfully said of any great charitable institution. Twenty-five thousand dollars would construct and furnish two small infirmaries, and I trust this moderate sum will not be denied us.

CONTINGENT FUND.

The improvement to be made from this fund in the immediate future is the construction of a cistern forty by thirty and twelve feet deep, for the catchment of the water that passes through the asylum at night, that it may be reserved for irrigating purposes, instead of passing off into tide water as at present. By this system we will be able to produce two crops a year from fifteen or twenty acres of reclaimed tule land, from which we now get but one.

Last year the material for laying new floors in eleven wards was charged to the repairs account, while the labor of putting them down was paid for out of the contingent fund. The bathrooms and water-closets have also been greatly improved, and two seats put in where only one formerly existed. The floors to be laid down this year will be paid for entirely out of the contingent fund, and as maple lumber is used instead of pine, they will last a generation.

PESTHOUSE.

During the epidemic of smallpox in the city last winter, fearing it might be introduced into this crowded asylum, I not only had all of the nurses revaccinated, but caused to be built a small farmhouse half a mile from the asylum, to be used as a pesthouse in case of necessity, but fortunately this dread disease did not pay us a visit.

WATER SUPPLY.

As has been stated in previous reports, this asylum is supplied with one hundred and fifty thousand gallons of water per day, from mountain streams and tunnels in the dry season, and an unlimited quantity during the winter. This is used for general purposes; but for irrigating the lawns, shrubs, and flowers, and for fire protection, we rely on reservoirs exclusively.

RESERVOIRS.

The dam of the fire reservoir has been raised since my last report six feet, which gives it a capacity of two million gallons. It is conveyed to the asylum through an eight-inch cast-iron pipe, under a pressure of one hundred and fifty feet, and renders the asylum as secure from fire as water can make it. Indeed, on the night of August 30, 1887, a fire occurred in the attic, or fifth story, of the center building, which would certainly have destroyed that portion of the asylum, and probably the adjacent wards, had it not been for the abundant water supply, and the commendable efforts of our well drilled fire company, composed of the attendants and employés of the asylum. It has not only saved property worth ten times the cost of its construction, but affords a sense of security from the ravages of this dread element that is truly refreshing. It is the cheapest and best insurance that can be placed upon a public building.

Lakes Camilla and Lucerne have been much enlarged since our last report, and now afford an abundance of water to keep ten acres of lawn green throughout the dry season. Work is still being done on these lakes at leisure times, and I shall not be satisfied until we can have green fields of alfalfa for our dairy cows, as well as green lawns and blooming flowers to delight the eyes of the occupants of the asylum and the visiting public.

DINING HALLS.

I believe it would be for the best interest of the house to construct—near the kitchen, in the north female yard—a dining-room for the female employes and attendants. As at present arranged, they eat in the patients' dining-rooms in the wards, and do most of the cooking with gas-stoves, which is both expensive and not devoid of danger. By having a dining-room near the kitchen, meals could be served in good condition and with little trouble.

SHEDS.

You have already authorized me to have constructed an additional shed for each yard, for the convenience and protection of the patients, but only one has as yet been constructed, as I have not felt that the condition of the contingent fund would justify the expenditure. I hope, however, to be able to have them built in due time.

ORCHARDS AND VINEYARDS.

As will be seen by Table 5 of the Steward's Report, in addition to the vegetables, milk, and other products of the farm and garden, our orchards and vineyards are beginning to yield handsome returns, which will be abundant when the young trees and vines come into full bearing. Ten acres in grapevines and twenty acres in fruit trees will certainly produce a liberal supply for a community of sixteen hundred people. Nearly all the varieties of fruit that have been tried do well, except the orange, which does not find in this climate a congenial home. The trees will grow and bear, but the fruit is neither so large nor luscious as in the warmer portions of the State. On the contrary, the olive tree grows vigorously, and I think will bear abundantly.

TREATMENT OF PATIENTS.

No material changes have taken place in the treatment of the patients since my last report, the same general principles governing us now as heretofore. The death rate being as low as could be expected from this class of patients, while those who have recovered and so much improved as to justify a discharge, is a most favorable showing. I am glad to report that as greater freedom is allowed the patients, less restraint has to be used, and I confidently expect to be able to report still greater improvement in these respects when relieved from the heavy pressure under which we have long been laboring from an overcrowded house. Employment, occupation, amusements, diversions, and open air exercises are insisted on, but the means to induce them are still inadequate. A better library, a magic lantern, a few musical instruments, and a good many cheap pictures would serve to occupy, enlighten, and amuse the patients, thereby diverting the mind and aiding in relief. The absence of the above adjuncts, together with the inferior quality and paucity of the ward furniture, attracted the attention of that close observer and intelligent critic, Rev. F. H. Wines, during his visit to this asylum last December, and drew from him the only adverse criticism that he had to make against the management of this asylum. Knowing the justice of his remarks, and feeling the want of these things more than he possibly could, I was compelled to plead guilty to the charge, and now appeal to the mercy and generosity of the Legislature, and ask its members to relieve this asylum of this stigma by appropriating \$2,500 to supply these articles and remove this reproach.

Mr. Wines for sixteen years has been the Secretary of the Board of State Charities of Illinois, is full of knowledge and facts in all matters pertaining to the insane, and other defective classes of this and other countries, not only as to their numbers and location, but as to the character and condition of the institutions in which they should be kept, and the manner in which they should be treated and provided for. Being a man of large experience, generous mind, and genial nature, I not only enjoyed his society, but profited by his instructive conversation. When he said that the asylums of the great State of California were conducted on a lower basis than those of any State in the Union, and that the standard should be raised by more liberal appropriations, I knew from my own personal observation that his statement was just and correct. I long fought against cutting down the appropriations for maintaining the insane of this State to forty cents per capita per day, but the heavy demands upon the treasury of the commonwealth prevailed against my arguments. Forty-five cents per capita would certainly place our asylums on a higher plane and more generous regimen, and would bring them up to the standard of the best in the land. "So mote it be." Justice to our noble and generous State demands, however, that the fact should be stated, that while there is not so much appropriated to each individual supported by the State, the aggregate is greater in proportion to the population than any State in the Union. In other words, while other States support only a portion of these helpless classes, California supports them all.

THIRD ASSISTANT PHYSICIAN.

The last Legislature having invested you with authority to appoint an additional Assistant Physician, I nominated Dr. Sims, the Sr. Assistant of the Alabama Asylum, for that position. My reasons for going out of the State to make this selection, as stated at the time, were, that Dr. Sims not only had credentials of the highest character as to his attainments as an accomplished physician and gentleman, but that he had served under Dr. Bryce, the only Superintendent of a State asylum in America where the non-restrained system had been successfully carried out; and being anxious to introduce that system in this asylum, I felt it could be more successfully accomplished by the aid of one who had been schooled in the methods through which it had been attained elsewhere. The fact, however, being pointed out that an Assistant Physician was a civil officer, and the law inhibiting any person other than a citizen of the State from holding any civil office in the State, his nomination could not be legally confirmed by you. The law under which this asylum was established provides that no person shall be eligible to this position who has not practiced five years, thus shutting out many of the brightest young men of the State from a contest for the position. Finally, Dr. J. W. Robertson, of Crescent City, a graduate of the State University, being highly recommended by Doctors Cole, Lane, Plummer, Tyrrell, and other prominent physicians, was elected to the position at the regular meeting of your Board in August, 1887. I am happy to be able to state that I have found Dr. Robertson to be an intelligent and accomplished physician, active, energetic, and studious in his habits, and fond of the work assigned him. He also has a decided taste for pathological investigation. He has performed quite a number of post-mortems, and I hope in time good results will follow his work in this direction. He also keeps a record of every case received in the asylum, and follows them up during their sojourn here. In addition to this, he makes daily visits through the outside wards and yards, thus

bringing every patient in the asylum under the direct observation of a physician and officer. His appointment was judicious, and his services greatly needed in carrying out the work of the medical staff.

PROVISION FOR THE CRIMINAL INSANE.

I am still strongly impressed with the great necessity of constructing a ward for insane criminals in connection with the hospital of one of the prisons of the State, and again suggest action in this direction by the next Legislature. It can be erected either at Folsom or San Quentin, by prison labor, at comparative small cost. Its urgent necessity has been so fully stated in other reports, and by other persons, it is deemed unnecessary to repeat them here. It may be well to state, however, that a bill for this purpose was passed by the last Legislature, but failed to receive the signature of the Governor, on the grounds that large appropriations on account of the insane had been made in other directions.

CALIFORNIA HOSPITAL FOR CHRONIC INSANE.

I am still of the opinion that the word *chronic* should be stricken from the law under which this hospital was inaugurated. It was put there under the false impression that chronic cases could be maintained at less cost than mixed cases. It would have been for no other reason, and this being untenable, every other consideration is in favor of admitting all insane persons who reside nearer Agnew than Stockton or Napa.

OBLIGATIONS

Are due to all who have, in the least degree, contributed to the pleasure of our people, or extended to them and us their good will and sympathy in the trying ordeal through which we are passing, and especially to the Board of Trustees, whose courtesy, kindness, and unstinted support have been as freely given as in bygone years.

Respectfully,

E. T. WILKINS,
Resident Physician.

AUGUST 14, 1888.

APPENDIX.

APPENDICES.

NUMBER OF ADMISSIONS, RECOVERIES, DEATHS, ETC.

The following table exhibits the number of admissions, recoveries, discharges, deaths, elopements, number resident at the close of each year, the increase for each year, whole number treated each year, and in the aggregate; also, the ratio of recoveries and deaths each year, and for the whole time, from November 15, 1875, to July 1, 1888:

YEARS.	Admissions	Recoveries	Discharges, Incurred	Deaths	Escapes	Number Resident at Close of Each Year	Increase	Whole Number Treated	Percent of Recoveries to Admissions	Percent of Deaths on Number Treated
November 15, 1875, to July 1, 1876	321	69	20	20	4	208	208	321	21.49	6.23
July 1, 1876, to July 1, 1877	451	140	71	49	4	395	187	659	31.04	7.43
July 1, 1877, to July 1, 1878	433	148	71	70	11	528	133	828	34.11	8.45
July 1, 1878, to July 1, 1879	615	184	133	104	8	714	186	1,143	29.91	8.22
July 1, 1879, to July 1, 1880	572	189	163	91	4	839	125	1,286	31.29	7.08
July 1, 1880, to July 1, 1881	563	133	122	124	2	1,021	182	1,402	23.62	8.84
July 1, 1881, to July 1, 1882	543	125	161	107		1,172	151	1,564	23.02	6.84
July 1, 1882, to July 1, 1883	463	127	174	112	3	1,219	47	1,635	27.43	6.85
July 1, 1883, to July 1, 1884	500	130	177	90	3	1,319	100	1,719	26.00	5.24
July 1, 1884, to July 1, 1885	479	119	155	110	5	1,409	90	1,798	24.84	6.12
July 1, 1885, to July 1, 1886	346	80	121	113	5	1,436	27	1,755	23.12	6.43
July 1, 1886, to July 1, 1887	363	95	146	98	6	1,454	18	1,799	26.17	5.53
July 1, 1887, to July 1, 1888	355	86	126	117	11	1,469	15	1,809	24.22	6.47

REPORT OF THE RESIDENT PHYSICIAN FOR THE YEAR END- ING JUNE 30, 1887.

To the honorable Board of Trustees of the Napa State Asylum for the Insane:

GENTLEMEN: I herewith submit to you my annual report for the year ending June 30, 1887.

ANNUAL SUMMARY.

The following summary exhibits the number of patients in the Asylum, June 30, 1886: number admitted, number under care and treatment, number discharged, eloped, and died during the year, and the number remaining in the Asylum June 30, 1887:

FROM JUNE 30, 1886, TO JUNE 30, 1887.	Males.	Females.	Total.
Number of patients, June 30, 1886.....	847	589	1,436
Number admitted during the year.....	227	136	363
Number under care and treatment.....	1,074	725	1,799
Number discharged, recovered.....	60	35	95
Number discharged, improved.....	49	75	124
Number discharged, unimproved.....	4	4	8
Number discharged, not insane.....	8	6	14
Number died.....	70	28	98
Number eloped.....	6		6
Discharged, died, and eloped.....	197	148	345
Number remaining June 30, 1887.....	877	577	1,454

TABLE I.

Showing the counties from which three hundred and sixty-three patients were admitted, from July 1, 1886, to July 1, 1887.

COUNTIES.	Males.	Females.	Total.
Alameda	5	8	13
Amador		1	1
Butte	2		2
Colusa	6	1	7
Contra Costa	1	1	2
Del Norte	1	2	3
Humboldt	4	3	7
Kern	1		1
Lassen		1	1
Los Angeles	3	8	11
Marin	13	2	15
Mendocino	13	5	18
Mono	1		1
Napa	9	6	15
Nevada		1	1
Placer	1	1	2
Sacramento	9	5	14
San Benito	4		4
San Bernardino	1	1	2
San Diego	5	1	6
San Francisco	95	61	156
San Luis Obispo	5		5
San Mateo	1		1
Santa Barbara	2	4	6
Santa Clara		2	2
Santa Cruz	7	5	12
Shasta		1	1
Siskiyou	1		1
Solano	13	5	18
Sonoma	10	5	15
Tehama	6	3	9
Trinity	2		2
Ventura	5		5
Yolo	1	2	3
Yuba		1	1
Totals	227	136	363

TABLE II.

Showing the nativity of three hundred and sixty-three patients, admitted from July 1, 1886, to July 1, 1887.

NATIVITY.	Males.	Females.	Total.
<i>United States.</i>			
California	22	16	38
Connecticut	1	—	1
Delaware	1	—	1
Georgia	1	—	1
Illinois	2	4	6
Indiana	1	3	4
Iowa	3	—	3
Kansas	—	1	1
Kentucky	2	3	5
Maine	5	4	9
Maryland	1	3	4
Massachusetts	2	4	6
Michigan	3	—	3
Missouri	6	2	8
New Jersey	2	—	2
New Hampshire	—	1	1
New York	8	8	16
North Carolina	1	—	1
Ohio	8	2	10
Oregon	—	1	1
South Carolina	1	—	1
Pennsylvania	6	2	8
Texas	—	1	1
United States	7	4	11
Vermont	4	1	5
Virginia	3	3	6
Wisconsin	—	1	1
Totals	90	64	154
<i>Foreign Countries.</i>			
Australia	1	—	1
Austria	2	—	2
Azores Islands	2	—	2
Bavaria	2	1	3
Canada	5	3	8
China	10	—	10
Denmark	2	—	2
East Indies	1	—	1
England	6	4	10
Finland	1	1	2
France	4	6	10
Germany	27	6	33
Holland	1	—	1
Ireland	30	29	59
Italy	5	1	6
Japan	1	—	1
Mexico	1	—	1
New Brunswick	—	1	1
Norway	2	2	4
Peru	1	2	3
Portugal	1	1	2
Prussia	1	1	2
Russia	2	—	2
Scotland	5	3	8
Sweden	1	3	4
Switzerland	8	3	11
Unknown	15	2	17
Wales	—	3	3
Totals	137	72	209

RECAPITULATION.

NATIVITY.	Males.	Females.	Total.
United States	90	64	154
Foreign countries	122	70	192
Unknown	15	2	17
Totals	227	136	363

TABLE III.

Showing the ages of three hundred and sixty-three patients at the time of their admission in the Asylum, from July 1, 1886, to July 1, 1887.

AGES.	Males.	Females.	Total.
Between 10 and 20 years	3	4	7
Between 20 and 30 years	49	25	74
Between 30 and 40 years	55	39	94
Between 40 and 50 years	49	28	77
Between 50 and 60 years	30	17	47
Between 60 and 70 years	19	18	37
Between 70 and 80 years	5	1	6
Between 80 and 90 years	2		2
Unknown	15	4	19
Totals	227	136	363

TABLE IV.

Showing the supposed causes of insanity in three hundred and sixty-three patients, as stated in commitments, from July 1, 1886, to July 1, 1887.

SUPPOSED CAUSES.	Males.	Females.	Total.
Abortion		1	1
Business troubles	8	3	11
Change of life		7	7
Childbirth		2	2
Death of relatives	3	5	8
Disappointment in love	1	2	3
Domestic trouble	5	10	15
Epilepsy	7	2	9
Hereditary	9	7	16
Ill health	1	1	2
Injury to head	3		3
Intemperance	26	6	32
Jealousy		1	1
Loss of property	6		6
Masturbation	25		25
Old age	2	1	3
Overwork	3		3
Paralysis	1		1
Religion	7	4	11
Spiritualism	2	1	3
Sunstroke	1		1
Suppressed menstruation		8	8
Syphilis	2		2
Unknown	113	73	186
Use of opium	2		2
Uterine trouble		2	2
Totals	227	136	363

TABLE V.

Showing the class of insanity of three hundred and sixty-three patients, as stated in commitments, from July 1, 1886, to July 1, 1887.

CLASS.	Males.	Females.	Total.
Dementia	19	5	24
Mania	122	74	196
Melancholia	18	16	34
Monomania	10	9	19
Puerperal mania	2	4	4
Senile dementia	2	2	4
Unknown	56	26	82
Totals	227	136	363

TABLE VI.

Showing the civil condition of three hundred and sixty-three patients, admitted from July 1, 1886, to July 1, 1887.

CIVIL CONDITION.	Males.	Females.	Total.
Divorced .....	.....	3	3
Married	66	71	137
Single	129	40	169
Unknown	21	1	22
Widows .....	.....	21	21
Widowers	11	.....	11
Totals	227	136	363

TABLE VII.

Showing the occupation of three hundred and sixty-three patients, admitted from July 1, 1886, to July 1, 1887.

OCCUPATION.	Males.	Females.	Total.
Agents	3		3
Artists	1		1
Bakers	3		3
Barbers	1		1
Blacksmiths	6		6
Bricklayers	3		3
Butchers	1		1
Carpenters	9		9
Cigarmakers	3		3
Clerks	8		8
Convicts	9		9
Cooks	7		7
Coopers	1		1
Dentists	1		1
Domestics		19	19
Druggists	1		1
Dressmakers		7	7
Engineers	2		2
Farmers	21		21
Gardeners	4		4
Harnessmakers	1		1
Housewives		79	79
Laborers	62		62
Lawyers	2		2
Locksmiths	1		1
Lumbermen	2		2
Machinists	2		2
Merchants	8		8
Miners	5		5
Music teachers	3	2	5
No occupation	13	22	35
Peddlers	2		2
Physicians	1		1
Plasterers	1		1
Sailors	9		9
Saloonkeepers	2		2
Servants	4	5	9
Sheepherders	2		2
Shoemakers	1		1
Stonecutters	1		1
Tailors	4		4
Unknown	13	2	15
Upholsterers	3		3
Waiters	1		1
Totals	227	136	363

TABLE VIII.

Showing the cause of death of ninety-eight patients, from July 1, 1886, to July 1, 1887.

Month.	CAUSE OF DEATH.	Nativity.	Age.	Males	Females
July, 1886	Organic disease of brain	Ireland	41	1	...
July, 1886	Consumption	Ireland	43	...	1
July, 1886	Consumption	France	37	...	1
July, 1886	Exhaustion	Massachusetts	53	...	1
July, 1886	Organic disease of brain	Tennessee	65	1	...
July, 1886	Exhaustion	Pennsylvania	49	...	1
July, 1886	Exhaustion	New Jersey	66	1	...
July, 1886	Consumption	Ireland	28	...	1
July, 1886	Organic disease of brain	California	25	...	1
August, 1886	Paralysis	Connecticut	58	1	...
August, 1886	Paralysis	Unknown	57	1	...
August, 1886	Apoplexy	Ireland	44	1	...
August, 1886	Consumption	Ireland	37	...	1
August, 1886	Pneumonia	Germany	50	1	...
August, 1886	Organic disease of brain	Germany	80	1	...
August, 1886	Consumption	New York	47	1	...
August, 1886	Paralysis	North Carolina	64	1	...
August, 1886	Organic disease of brain	Ireland	44	1	...
August, 1886	Consumption	Wales	61	1	...
August, 1886	Maniacal exhaustion	France	68	...	1
August, 1886	Maniacal exhaustion	New York	48	1	...
September, 1886	Epilepsy	California	22	...	1
September, 1886	Heart disease	Maine	48	...	1
September, 1886	Heart disease	Illinois	59	1	...
September, 1886	Congestion of lungs	Ireland	46	...	1
September, 1886	Paralysis	Ireland	31	1	...
September, 1886	Paralysis	Ireland	67	1	...
September, 1886	Paralysis	Alabama	66	1	...
October, 1886	Old age	Ireland	86	1	...
October, 1886	Organic disease of brain	Missouri	42	...	1
October, 1886	Organic disease of brain	Illinois	47	1	...
October, 1886	Cancer	Virginia	44	1	...
October, 1886	Paralysis	Bavaria	35	1	...
October, 1886	Consumption	California	31	1	...
November, 1886	Exhaustion	Switzerland	56	...	1
November, 1886	Consumption	United States	40	...	1
November, 1886	Maniacal exhaustion	Bavaria	54	...	1
November, 1886	Cerebral effusion	Ireland	42	1	...
November, 1886	Epilepsy	Ireland	22	1	...
November, 1886	Exhaustion	China	25	1	...
December, 1886	Paralysis	Ireland	46	1	...
December, 1886	Organic disease of brain	New York	37	1	...
December, 1886	Paralysis	France	42	...	1
December, 1886	Organic disease of brain	Ireland	72	1	...
December, 1886	General paralysis	Austria	...	1	...
December, 1886	Paralysis	Germany	56	1	...
December, 1886	Epilepsy	Ireland	64	1	...
December, 1886	Consumption	Italy	47	...	1
December, 1886	Exhaustion	Massachusetts	72	1	...
December, 1886	Dysentery	New York	41	1	...
December, 1886	Dysentery	Switzerland	32	1	...
December, 1886	Dysentery	California	35	1	...
December, 1886	Pneumonia	Ireland	40	1	...
December, 1886	Diarrhoea	Ireland	62	1	...
January, 1887	Organic disease of brain	Ohio	44	1	...
January, 1887	Dysentery	New York	69	1	...
January, 1887	Old age	Mexico	80	1	...
January, 1887	Old age	Ireland	60	...	1
February, 1887	Pneumonia	Ireland	62	1	...
February, 1887	Organic disease of brain	Denmark	46	1	...
February, 1887	Exhaustion	Ireland	65	...	1
February, 1887	Dysentery	Germany	54	...	1
February, 1887	Killed by roommate	California	29	1	...
February, 1887	Epilepsy	Ohio	39	1	...

TABLE VIII—Continued.

Month.	CAUSE OF DEATH.	Nativity.	Age.	Males.	Females.
February, 1887	Enteritis	Denmark	63	1	
February, 1887	Epilepsy	California	25		1
February, 1887	Organic disease of brain	Germany		1	
February, 1887	Exhaustion	Japan	32	1	
February, 1887	Consumption	Ireland	36		1
March, 1887	Apoplexy	California	43	1	
March, 1887	Consumption	Germany	29		1
March, 1887	Consumption	Denmark	31		1
March, 1887	Syphilis	Missouri	38		1
March, 1887	Congestion of lungs	Hungary	58	1	
March, 1887	Exhaustion	Scotland	25	1	
March, 1887	Anemia	Germany	43	1	
March, 1887	Apoplexy	Lower California	68	1	
March, 1887	Exhaustion	Kentucky	75	1	
April, 1887	Exhaustion	Germany	65	1	
April, 1887	Paralysis	Ireland	50	1	
April, 1887	Dropsy	Peru			1
April, 1887	Exhaustion	Bavaria	83	1	
May, 1887	Organic disease of brain	Italy	37	1	
May, 1887	Consumption	Pennsylvania	50	1	
May, 1887	Pneumonia	Iowa	36	1	
May, 1887	Organic disease of brain	Georgia	57	1	
May, 1887	Consumption	England	29		1
May, 1887	Exhaustion	Ireland	42	1	
May, 1887	Epilepsy	England	42		1
May, 1887	Old age	New York	87	1	
May, 1887	Pneumonia	France	54	1	
May, 1887	Unknown	Canada	37	1	
May, 1887	Paralysis	France	33	1	
June, 1887	Consumption	Finland	42	1	
June, 1887	Dropsy	Germany	34	1	
June, 1887	Organic disease of brain	California	29	1	
June, 1887	Consumption	Italy	47	1	
June, 1887	Pneumonia	Louisiana	33	1	

TABLE IX.

Recapitulation of the causes of death of ninety-eight patients, from July 1, 1886, to July 1, 1887.

CAUSE OF DEATH.	Males.	Females.	Total.
Apoplexy	2		2
Consumption	6	10	16
Dysentery	4	1	5
Epilepsy	3	3	6
Exhaustion	8	4	12
Heart disease	1	1	2
Maniacal exhaustion	1	2	3
Old age	3	1	4
Organic disease of the brain	12	2	14
Paralysis	11	1	12
Pneumonia	6		6
All other causes	13	3	16
Totals	70	28	98

STEWARD'S REPORT.

TABLE FIRST.

Amount of articles purchased and consumed, and other expenses, for the fiscal year ending June 30, 1887.

ARTICLES.	Value.
Flour	\$9,331 04
Meat	27,439 49
Sugar	3,515 60
Tea	1,125 33
Syrup	1,526 48
Potatoes	2,387 33
Butter	7,472 99
Coffee and chicory	1,985 74
Lard	50 28
Fish	495 33
Poultry and eggs	2,959 25
Beans	767 87
Rice and cracked wheat	968 10
Cornmeal and oatmeal	911 51
Fruit	243 40
Vegetables	6 04
Salt	143 21
Vinegar and pickles	317 20
Small groceries	1,790 65
Soap	1,604 81
Drugs	1,531 07
Liquor and ale	433 44
Tobacco	1,554 88
Drygoods	5,145 44
Clothing and hats	4,268 45
Shoes and leather	2,306 32
Blankets	1,085 73
Furniture and crockery	716 79
Hardware and tinware	2,700 38
Spoons and cutlery	53 86
Carpeting	745 77
Grain and feed	1,485 17
Garden tools and seed	284 57
Lumber	2,658 45
Repairs	886 14
Brooms and brushes	457 54
Books and stationery	321 53
Gas	1,888 14
Paints, oil, and glass	323 10
Fuel	11,228 34
Bedding	652 75
Castings, pipe, and iron	972 73
Payroll	81,331 12
Returned escapes	299 25
Discharged patients	467 75
Trustees' services and mileage	503 00
Telegraphing, postage, freight, and expressage	593 67
Ice	211 18
Exchange on coin	91 30
Advertising	309 50
Clothes baskets	72 00
Settees	211 00
Washing machine	550 00
Restraining apparatus	32 50
Whip and robes	15 00
Labor	418 60
Harness	67 25
Coffee roaster	31 00
Covering steam pipe	690 90

TABLE FIRST—Continued.

ARTICLES.	Value.
Diamond mortice.....	\$35 00
Gas retorts.....	96 00
"Daily Chronicle".....	2 00
Rubber cover and rug.....	44 50
Wagon.....	160 00
Steam gauge.....	10 00
French range.....	72 00
Galvanic battery.....	22 50
Washers, pulleys, and belting.....	300 00
Mangle, etc.....	739 35
Musical instruments.....	18 75
Millwork.....	2 25
Painting wagon.....	8 00
Clocks.....	138 30
Oysters.....	5 00
Dials for clock.....	15 00
Brick.....	111 00
Sewing machines.....	108 00
Miscellaneous.....	350 94
Total.....	\$194,937 05

TABLE SECOND.

Showing the cost of the different departments for the fiscal year ending June 30, 1887.

DEPARTMENTS.	Cost.
Kitchen and dining rooms.....	\$53,251 58
Wards.....	17,118 54
Bakery.....	9,521 96
Laundry.....	1,962 47
Engine room.....	206 65
Farm, garden, dairy, and stable.....	2,504 67
Trustees' salaries.....	563 60
Repairs.....	6,934 25
Miscellaneous.....	1,482 77
Drug store.....	1,753 16
Furnishing.....	884 24
Center building.....	1,196 13
Office.....	886 49
Payroll.....	81,331 12
Returned escapes.....	299 25
Discharged patients.....	467 75
Fuel.....	11,158 85
Gas.....	1,888 14
Coombs ranch.....	233 33
Tin shop.....	896 19
Night watch.....	86 41
Advertising.....	309 50
Total.....	\$194,937 05

TABLE THIRD.

Disbursements for the fiscal year ending June 30, 1887.

FOR WHAT PURPOSE.	Amount.
Maintenance	\$194,052 81
Furnishing	884 24
Total	\$194,937 05

TABLE FOURTH.

Averages for the fiscal year ending June 30, 1887.

MONTHS.	Average Number of Patients Daily	Average Daily Expenses	Average Cost per capita per Day	Average Cost per capita per Month
July, 1886	1,441	\$463 95	\$0 32 $\frac{2}{10}$	\$9 98
August, 1886	1,448	492 77	34	10 54
September, 1886	1,453	495 51	34	10 20
October, 1886	1,436	509 50	35 $\frac{5}{10}$	11 00
November, 1886	1,432	558 84	39	11 70
December, 1886	1,429	578 87	40 $\frac{5}{10}$	12 55
January, 1887	1,427	547 26	38 $\frac{3}{10}$	11 88
February, 1887	1,441	549 75	39 $\frac{5}{10}$	11 45
March, 1887	1,436	533 53	37 $\frac{2}{10}$	11 53
April, 1887	1,428	509 46	36 $\frac{9}{10}$	11 07
May, 1887	1,436	588 56	39 $\frac{9}{10}$	11 97
June, 1887	1,450	539 22	37 $\frac{2}{10}$	11 16
Yearly averages	1,438	\$530 60	\$0 37 $\frac{5}{10}$	\$11 25

TABLE FIFTH.

Products of the farm, garden, and dairy for the fiscal year ending June 30, 1887.

ARTICLES.	Amount.
Asparagus, pounds	3,548
Apples, pounds	3,688
Blackberries, pounds	409
Beets (table), pounds	11,970
Beets (cow), pounds	80,000
Beans, pounds	1,453
Cabbage, pounds	88,877
Carrots, pounds	24,301
Corn, dozen	18
Cucumbers, dozen	321
Celery, pounds	2,751
Cale, pounds	684
Cauliflower, pounds	2,935
Chickens, dozen	17½
Ducks, dozen	34½
Egg plant, pounds	441
Eggs, dozen	1,679½
Figs, pounds	112
Grapes, pounds	40,120
Hay, tons	194
Lettuce, pounds	6,030
Milk, gallons	26,823
Nectarines, pounds	111
Oyster plant, pounds	447
Okra, pounds	448
Onions, pounds	31,352
Potatoes (sweet), pounds	1,851
Peppers, pounds	94
Pears, pounds	70
Plums, pounds	975
Peas, pounds	2,076
Peaches, pounds	652
Tomatoes, pounds	31,215
Turnips, pounds	37,156
Cattle sold	\$1,407 00
Hogs sold	\$288 50

REPORTS.

JULY 1, 1887, TO JULY 1, 1888.

TABLE I.

Showing the counties from which three hundred and fifty-five patients were admitted, from July 1, 1887, to July 1, 1888.

COUNTIES.	Males.	Females.	Total.
Alameda	6	8	14
Colusa	3	1	4
Contra Costa	2	1	3
Del Norte		1	1
Humboldt	11	1	12
Lake	3		3
Los Angeles	6	7	13
Marin	2		2
Mendocino	12	1	13
Napa	12	7	19
Placer		3	3
Plumas	1		1
Sacramento	4	3	7
San Benito	1		1
San Bernardino	1	1	2
San Diego	8	3	11
San Francisco	102	57	159
San Joaquin	1	1	2
San Luis Obispo	2	2	4
San Mateo	1	1	2
Santa Barbara	4	1	5
Santa Clara	2	5	7
Santa Cruz	8	1	9
Shasta	1	1	2
Si-kiyou	3	2	5
Solano	12	3	15
Sonoma	16	8	24
Tehama	1	1	2
Trinity		1	1
Ventura	6		6
Yolo	1	1	2
Yuba	1		1
Totals	233	122	355

TABLE II.

Showing the nativity of three hundred and fifty-five patients admitted from July 1, 1887, to July 1, 1888.

NATIVITY.	Males.	Females.	Total.
<i>United States.</i>			
California	17	16	33
Connecticut	2	2	4
Illinois	3	4	7
Indiana	1	2	3
Iowa	1	5	6
Kansas	1	1	2
Kentucky	4	1	5
Louisiana	3	2	5
Maine	1	5	6
Maryland	3	3	6
Massachusetts	6	1	7
Michigan	5	1	6
Minnesota	1	1	2
Missouri	7	4	11
Nebraska	1	1	2
Nevada	1	1	2
New Jersey	1	1	2
New York	14	9	23
North Carolina	1	1	2
Ohio	5	4	9
Pennsylvania	9	2	11
Rhode Island	1	1	2
Tennessee	1	1	2
Texas	2	1	3
United States	14	3	17
Vermont	1	1	2
Virginia	3	1	4
Wisconsin	1	1	2
Totals	108	61	169
<i>Foreign Countries.</i>			
Australia	3	1	4
Austria	1	1	2
Azores Islands	1	1	2
Bavaria	1	1	2
Canada	2	1	3
Chili	1	1	2
China	10	1	11
Denmark	2	1	3
England	5	3	8
Finland	2	1	3
France	5	2	7
Germany	34	15	49
Greece	1	1	2
Holland	1	1	2
Ireland	22	23	45
Italy	4	1	5
Mexico	1	1	2
New Brunswick	2	2	4
Norway	2	1	3
Nova Scotia	2	2	4
Poland	1	1	2
Prussia	1	1	2
Russia	1	1	2
Sandwich Islands	1	1	2
Scotland	2	1	3
Sweden	8	2	10
Switzerland	3	3	6
Unknown	8	1	9
Wales	1	2	3
Totals	125	61	186

REPORT OF THE TRUSTEES OF THE

RECAPITULATION.

NATIVITY.	Males.	Females.	Total.
United States	108	61	169
Foreign countries	117	61	178
Unknown	8		8
Totals	233	122	355

TABLE III.

Showing the ages of three hundred and fifty-five patients at the time of their admission in the Asylum, from July 1, 1887, to July 1, 1888.

AGES.	Males.	Females.	Total.
Between 10 and 20 years	9	10	19
Between 20 and 30 years	51	25	76
Between 30 and 40 years	68	33	101
Between 40 and 50 years	52	31	83
Between 50 and 60 years	34	14	48
Between 60 and 70 years	9	5	14
Between 70 and 80 years	2	2	4
Between 80 and 90 years	1		1
Unknown	7	2	9
Totals	233	122	355

TABLE IV.

Showing the supposed cause of insanity in three hundred and fifty-five patients, as stated in commitments, from July 1, 1887, to July 1, 1888.

SUPPOSED CAUSES.	Males.	Females.	Total.
Business trouble	8		8
Change of life		2	2
Childbirth		1	1
Death of children	1	1	2
Disappointment in love	2	1	3
Domestic trouble	1	8	9
Epilepsy	15	2	17
Fright		1	1
Hereditary	9	4	13
Ill health	1	1	2
Injury to head	5	3	8
Intemperance	26	7	33
Jealousy	1		1
Loss of property		2	2
Masturbation	21	3	24
Old age		1	1
Overwork	4	1	5
Religion	3	5	8
Spiritualism		3	3
Sunstroke	1		1
Suppressed menstruation		6	6
Syphilis	1		1
Unknown	128	61	189
Use of opium	6	4	10
Uterine trouble		5	5
Totals	233	122	355

TABLE V.

Showing the class of insanity of three hundred and fifty-five patients, as stated in commitments, from July 1, 1887, to July 1, 1888.

CLASS.	Males.	Females.	Total.
Dementia	19	7	26
Dipsomania	1	—	1
Mania	113	70	183
Melancholia	13	8	21
Monomania	21	10	31
Puerperal mania	—	1	1
Senile dementia	1	1	2
Unknown	65	25	90
Totals	233	122	355

TABLE VI.

Showing the civil condition of three hundred and fifty-five patients, admitted from July 1, 1887, to July 1, 1888.

CIVIL CONDITION.	Males.	Females.	Total.
Divorced	2	1	3
Married	66	65	131
Single	142	39	181
Unknown	13	1	14
Widows	—	16	16
Widowers	10	—	10
Totals	233	122	355

TABLE VII.

Showing the occupation of three hundred and fifty-five patients, admitted from July 1, 1887, to July 1, 1888.

OCCUPATION.	Males.	Females.	Total.
Actors	1	—	1
Agents	3	—	3
Artists	—	1	1
Barbers	1	—	1
Barkeepers	1	—	1
Blacksmiths	4	—	4
Boilermakers	3	—	3
Bookkeepers	3	—	3
Bricklayers	1	—	1
Brokers	2	—	2
Butchers	3	—	3
Carpenters	6	—	6
Clerks	8	—	8
Confectioners	1	—	1
Convicts	4	—	4
Cooks	4	2	6
Dairymen	1	—	1
Domestics	—	13	13
Engineers	3	—	3
Farmers	24	—	24
Gardeners	2	—	2
Harnessmakers	1	—	1

TABLE VII—Continued.

OCCUPATION.	Males.	Females.	Total.
Hotel keepers	3		3
Housewives		69	69
Journalists	1		1
Laborers	75		75
Laundrymen	1	1	2
Lawyers	1		1
Lumbermen	1		1
Machinists	3		3
Merchants	4		4
Millers	4		4
Miners	8		8
Ministers	1		1
Music teachers	1		1
No occupation	14	22	36
Painters	7		7
Peddlers	2		2
Plasterers	1		1
Plumbers	2		2
Sailors	7		7
Seamstresses		6	6
Servants	3	2	5
Sheepherders	2		2
Shoemakers	2		2
Stage drivers	1		1
Stonecutters	3		3
Students		2	2
Surveyors	1		1
Tailors	1		1
Teachers		3	3
Tinsmiths	1		1
Unknown	6	1	7
Upholsterers	1		1
Totals	233	122	355

TABLE VIII.

Showing the cause of death of one hundred and seventeen patients, from July 1, 1887, to July 1, 1888.

Month.	CAUSE OF DEATH.	Nativity.	Age.	Male.	Female.
July, 1887	Epilepsy	California	21		1
July, 1887	Consumption	Azores Islands	55	1	
July, 1887	Consumption	Germany	43	1	
July, 1887	Consumption	Illinois	31	1	
July, 1887	Heart disease	Mexico	48	1	
July, 1887	Exhaustion	Ireland	50		1
July, 1887	General paralysis	New York	46	1	
July, 1887	Epilepsy	Ireland	52	1	
July, 1887	Paralysis	England	73	1	
August, 1887	Exhaustion	Norway	56		1
August, 1887	Epilepsy	Australia	34	1	
August, 1887	Exhaustion	Unknown		1	
August, 1887	Congestion of lungs	Ireland	52		1
August, 1887	Consumption	England	18		1
August, 1887	Consumption	Switzerland	50	1	
August, 1887	Organic disease of brain	Ireland	67		1
September, 1887	Consumption	Massachusetts	31		1
September, 1887	Organic disease of brain	Scotland	67	1	
September, 1887	Inflammation of bowels	Rhode Island	49	1	
September, 1887	Organic disease of brain	Unknown		1	
September, 1887	Exhaustion	Ohio	75	1	

TABLE VIII—Continued.

Month.	CAUSE OF DEATH.	Nativity.	Age.	Male	Female
September, 1887.	Inflammation of bowels	Italy	35	1	
September, 1887.	Cancer	Kansas	45		1
September, 1887.	Paralysis	Germany	34	1	
September, 1887.	Epilepsy	California	22		1
September, 1887.	Epilepsy	California	20		1
September, 1887.	Organic disease of brain	Missouri	26	1	
September, 1887.	Exhaustion	Pennsylvania	45	1	
September, 1887.	Heart disease	Denmark	51	1	
September, 1887.	Suicide	Germany	36	1	
October, 1887.	Exhaustion	Vermont	52	1	
October, 1887.	Exhaustion	Norway	17	1	
October, 1887.	Exhaustion	California	18		1
October, 1887.	Organic disease of brain	Switzerland	44	1	
October, 1887.	Consumption	France	47		1
October, 1887.	Consumption	Finland	34		1
November, 1887.	Exhaustion	Kentucky	64		1
November, 1887.	Exhaustion	United States	32	1	
November, 1887.	Old age	Vermont	67		1
November, 1887.	Pneumonia	California	27		1
November, 1887.	Organic disease of brain	Germany	33	1	
December, 1887.	Congestion of lungs	New York	52	1	
December, 1887.	Consumption	England	47	1	
December, 1887.	Old age	Ireland	75	1	
December, 1887.	Exhaustion	Louisiana	14		1
December, 1887.	Organic disease of brain	New York	57	1	
December, 1887.	Consumption	Ireland		1	
December, 1887.	Paralysis	Ireland	63	1	
December, 1887.	Consumption	Ireland	39	1	
December, 1887.	Consumption	New Jersey	21	1	
December, 1887.	Consumption	Unknown		1	
December, 1887.	Enteritis	Prussia	38	1	
January, 1888.	Exhaustion	Connecticut	56	1	
January, 1888.	Organic disease of brain	New York	45	1	
January, 1888.	Paralysis	Ireland	39	1	
January, 1888.	Epilepsy	Scotland	40	1	
January, 1888.	Epilepsy	Bavaria	49	1	
January, 1888.	General paralysis	Germany	35	1	
January, 1888.	Consumption	Scotland	34	1	
January, 1888.	Consumption	New York	25	1	
January, 1888.	Epilepsy	Michigan	33	1	
January, 1888.	Epilepsy	California	29	1	
January, 1888.	Exhaustion	Sweden	55	1	
February, 1888.	Old age	Massachusetts	83		1
February, 1888.	Organic disease of brain	Pennsylvania	27		1
February, 1888.	Exhaustion	New Jersey	45		1
February, 1888.	Paralysis	Ohio	51	1	
February, 1888.	Exhaustion	Vermont	45		1
March, 1888.	Tuberculosis	Oregon	31		1
March, 1888.	Pericarditis	Ireland	57		1
March, 1888.	Inanition	Norway	62		1
March, 1888.	Paralysis	Norway	48	1	
March, 1888.	Organic disease of brain	Ireland	57		1
March, 1888.	Consumption	Ohio	49	1	
March, 1888.	Epilepsy	New York	42	1	
March, 1888.	Paralysis	Vermont	64		1
March, 1888.	Organic disease of brain	Rhode Island	54	1	
March, 1888.	Epilepsy	Italy	29	1	
March, 1888.	Paralysis	California	29	1	
April, 1888.	Paralysis	Ireland	40	1	
April, 1888.	Paralysis	Ireland	60	1	
April, 1888.	Consumption	Italy	31	1	
April, 1888.	Paralysis	Ireland	52		1
April, 1888.	Cerebral congestion	United States	50	1	
April, 1888.	Consumption	Ireland	34		1
April, 1888.	Consumption	California	28	1	
April, 1888.	Consumption	New Jersey	35	1	
April, 1888.	Organic disease of brain	Ireland	46	1	
April, 1888.	Epilepsy	France	47	1	

TABLE VIII—Continued.

Month.	CAUSE OF DEATH.	Nativity.	Age.	Male	Female
April, 1888	Peritonitis	Maine	34	1	
May, 1888	Consumption	New York	79	1	
May, 1888	Paralysis	Germany	68	1	
May, 1888	Tuberculosis	Russia	34	1	
May, 1888	Tuberculosis	Canada	50		1
May, 1888	Consumption	Prussia	30	1	
May, 1888	Exhaustion	United States	28	1	
May, 1888	Cancer	Ireland	53		1
May, 1888	Old age	New York	81	1	
May, 1888	Pyæmia	China	19	1	
May, 1888	Paralysis	Mexico	37	1	
May, 1888	Consumption	Sweden	66	1	
May, 1888	Organic disease of brain	Louisiana	44		1
May, 1888	Suicide	New York	36	1	
May, 1888	Organic disease of brain	Germany	61	1	
June, 1888	Consumption	Ireland	26	1	
June, 1888	Pulmonary congestion	England	82	1	
June, 1888	Maniacal exhaustion	Ireland	45		1
June, 1888	General paralysis	Hungary	37		1
June, 1888	Exhaustion	Ohio	66		1
June, 1888	Consumption	California	37		1
June, 1888	Organic disease of brain	Sweden	40	1	
June, 1888	Consumption	Sweden	34	1	
June, 1888	Exhaustion	Italy	57	1	
June, 1888	Epilepsy	Germany	34	1	
June, 1888	Consumption	Germany	28		1
June, 1888	Pneumonia	California	24		1
June, 1888	Consumption	California	34		1

TABLE IX.

Recapitulation of the causes of death of one hundred and seventeen patients, from July 1, 1887, to July 1, 1888.

CAUSE OF DEATH.	Males.	Females.	Total.
Consumption	20	8	28
Epilepsy	10	3	13
Exhaustion	10	8	18
General paralysis	2	1	3
Old age	2	2	4
Organic disease of brain	11	4	15
Paralysis	11	2	13
All other causes	13	10	23
Totals	79	38	117

STEWARD'S REPORT.

TABLE FIRST.

Amount of articles purchased and consumed, and other expenses, for the fiscal year ending June 30, 1888.

ARTICLES.	Value.
Flour.....	\$9,489 33
Meat.....	36,671 28
Sugar.....	3,647 99
Tea.....	1,516 21
Syrup.....	2,171 92
Potatoes.....	2,784 37
Butter.....	8,582 73
Coffee and chicory.....	3,440 68
Lard.....	47 97
Fish.....	595 85
Poultry and eggs.....	3,496 17
Beans.....	858 99
Rice and cracked wheat.....	1,317 34
Cornmeal and oatmeal.....	1,086 40
Fruit.....	542 90
Vegetables.....	7 65
Salt.....	172 37
Vinegar and pickles.....	266 27
Small groceries.....	1,224 89
Soap.....	1,673 99
Drugs.....	1,551 49
Liquor and ale.....	510 81
Tobacco.....	1,334 42
Drygoods.....	4,198 01
Clothing and hats.....	4,508 46
Shoes and leather.....	2,295 70
Blankets.....	883 83
Furniture and crockery.....	940 36
Hardware and tinware.....	1,637 73
Spoons and cutlery.....	47 07
Carpeting.....	683 09
Grain and feed.....	1,723 17
Garden tools and seed.....	275 00
Lumber.....	798 45
Repairs.....	1,194 41
Brooms and brushes.....	453 23
Books and stationery.....	169 85
Gas.....	2,582 63
Paint, oil, and glass.....	616 76
Fuel.....	12,318 81
Bedding.....	490 87
Castings, pipe, and iron.....	360 35
Payroll.....	85,464 71
Returned escapes.....	68 40
Discharged patients.....	358 90
Trustees' services and mileage.....	701 00
Telegraphing, postage, freight, and expressage.....	551 79
Ice.....	152 97
Advertising.....	300 00
Straw.....	166 49
Labor.....	222 45
Harness.....	57 00
Bath tubs.....	150 00
Rubber hose.....	16 00
Wagon.....	100 50
Water-closets.....	310 50
Steam trap.....	40 75
Carried forward.....	\$207,831 26

REPORT OF THE TRUSTEES OF THE

TABLE FIRST—Continued.

ARTICLES.	Value.
Brought forward	\$207,831 26
Expenses of patients to circus	25 25
Brick	240 00
Buss hire	30 50
Head in accumulator	129 00
Platform scales	22 00
Powder and fuse	12 12
Vaccine virus	23 50
Miscellaneous	1,059 46
Total	\$209,373 09

TABLE SECOND.

Showing the cost of the different departments for the fiscal year ending June 30, 1888.

DEPARTMENT.	Cost.
Kitchen and dining rooms	\$68,103 77
Wards	15,701 35
Bakery	9,559 51
Laundry	1,111 27
Engine room	205 53
Farm, garden, dairy, and stable	2,660 27
Trustees' services and mileage	701 00
Building and repairs	4,634 26
Miscellaneous	1,040 81
Drug store	1,819 66
Furnishing	301 85
Center building	1,191 55
Office	833 35
Payroll	85,464 71
Returned escapes	68 40
Discharged patients	358 90
Fuel	12,210 52
Gas	2,582 63
Coombs ranch	186 77
Tin shop	283 67
Night watch	49 31
Advertising	300 00
Grounds	4 00
Total	\$209,373 09

TABLE THIRD.

Disbursements for the fiscal year ending June 30, 1888.

FOR WHAT PURPOSE.	Amount.
Maintenance	\$209,071 24
Furnishing	301 85
Total	\$209,373 09

TABLE FOURTH.

Averages for the fiscal year ending June 30, 1888.

MONTHS.	Average Number of Patients Daily	Average Daily Expenses	Average Cost per Capita per Day	Average Cost per Capita per Month.
July, 1887	1,454	\$507 80	\$0 34 ¹ / ₂	\$10 81
August, 1887	1,450	537 54	37 ¹ / ₂	11 47
September, 1887	1,454	533 41	36 ¹ / ₂	11 01
October, 1887	1,452	544 32	37 ¹ / ₂	11 62
November, 1887	1,450	596 26	41 ¹ / ₂	12 33
December, 1887	1,448	621 15	42 ¹ / ₂	13 29
January, 1888	1,447	603 59	41 ¹ / ₂	12 92
February, 1888	1,457	619 67	43 ¹ / ₂	12 53
March, 1888	1,461	601 35	41 ¹ / ₂	12 77
April, 1888	1,468	608 05	41 ¹ / ₂	12 42
May, 1888	1,476	529 42	35 ¹ / ₂	11 12
June, 1888	1,476	555 65	37 ¹ / ₂	11 22
Yearly averages	1,458	\$571 52	\$0 39 ¹ / ₂	\$11 96

TABLE FIFTH.

Products of the farm, garden, and dairy for the fiscal year ending June 30, 1888.

ARTICLES.	Amount.
Asparagus, pounds	3,300
Apples, pounds	10,691
Apricots, pounds	1,590
Blackberries, pounds	600
Beets (table), pounds	4,581
Beets (cow), pounds	83,440
Beans, pounds	2,934
Cabbage, pounds	110,000
Carrots, pounds	19,156
Cherries, pounds	1,120
Currants, pounds	53
Corn (green), dozen	151
Cucumbers, dozen	60
Celery, pounds	2,611
Chickens, dozen	113
Ducks, dozen	95
Eggs, dozen	984
Grapes, pounds	31,320
Hay, tons	222
Lettuce, pounds	2,439
Milk, gallons	27,650
Nectarines, pounds	2,648
Okra, pounds	515
Onions, pounds	33,878
Parsnips, pounds	7,893
Potatoes (sweet), pounds	2,379
Potatoes, pounds	3,535
Peppers, pounds	1,011
Peas, pounds	852
Plums, pounds	357
Peaches, pounds	9,089
Tomatoes, pounds	39,981
Turnips, pounds	27,798
Rhubarb, pounds	270
Squash, pounds	13,275
Melons, number	400
Raspberries, pounds	100
Calves sold	\$300 00
Hogs sold	\$643 50

The location of the Asylum for the Insane at Napa has, from a climatological standpoint, proved a most judicious selection. It is situated in the modified coast belt, distant but a few miles from the bay of San Francisco. The ocean breeze is here divested of all rawness; nevertheless, it has by no means lost its characteristic freshness, and is still cool and bracing. The fogs, which nearer the coast are unpleasantly moist and clinging, here either ride high or are entirely dissipated.

The tables appended make it evident that this climate is, from a therapeutic standpoint, all that can be desired. During the coldest month of the two years covered by this table the mean temperature was 41° above zero, while that of the hottest month was only 66° .

Although the maximum or day temperatures were occasionally high, the mean maximum was never over 77° , while the minimum or night temperatures during the same month averaged 54° . It was but seldom that even such temperatures as these were reached, the yearly maximum averaging 64° , and the minimum 45° .

Occasionally during the months of January and February the night temperature fell below 32° ; but even in these months such a low temperature was exceptional, the lowest average night temperature registered during any one month being 34° , while the same month had an average maximum temperature of 48° .

During the summer the nights are always cool, and the atmosphere is so fresh and invigorating that refreshing sleep is induced. The days, while warm and pleasant, are by no means oppressive, and the most active exercises are indulged in by the patients. Our lawns, walks, and pleasure grounds are admirably adapted for quoits, croquet, baseball, and other athletic games. For such sports the patients have developed a great fondness; and the fact that they can be freely indulged in during the whole year has much to do with the improvement noted in many cases which other remedial agents have failed to benefit. During the winter rains do not materially interfere with the usual pastimes of the inmates, and but slight changes are necessary either in clothing or heating.

Day rooms and amusement halls, so characteristic of eastern asylums, are here unnecessary. Beyond all question this climate is a great adjuvant to the treatment of the insane, and its beneficial effects are not confined to one class of cases, or in one particular direction, but it is the keystone to our whole therapy.



SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.
1888.

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The following Table shows the

YEARS.	MEAN.	AUGUST.				SEPTEMBER.				MEAN.
		Mean.	Average Maximum.	Average Minimum.	Rain for Month.	Mean.	Average Maximum.	Average Minimum.	Rain for Month.	
1877-8.....	61.2	76.2	52.2	.....	65.5	79.0	52.0	.....	0.6	61.2
1878-9.....	64.5	75.8	53.2	.01	61.5	74.3	48.0	1.50	3.9	64.5
1879-80.....	64.9	77.0	52.8	.....	63.3	77.0	49.7	.....	0.1	64.9
1880-1.....	62.2	74.9	49.5	.....	61.5	74.4	48.6	.....	0.1	62.2
1881-2.....	63.0	75.4	50.6	.....	61.6	74.2	49.1	.23	0.0	63.0
1882-3.....	62.4	73.7	51.1	.....	63.7	73.5	51.0	.48	7.6	62.4
1883-4.....	63.4	76.2	50.6	.....	64.2	76.1	52.4	1.10	4.1	63.4
1884-5.....	62.8	76.2	49.4	.....	58.0	70.3	45.7	.21	1.7	62.8
1885-6.....	61.9	70.2	53.6	.....	62.9	72.9	52.9	.07	0.0	61.9
1886-7.....	65.5	77.0	54.0	.....	62.0	73.0	51.0	.....	7.6	65.5
1887-8.....	60.6	70.4	50.8	.....	62.5	73.8	51.2	.22	7.2	60.6
Averages.....	63.2	74.8	51.6	.....	62.4	74.4	50.5	.34	5.5	63.2

SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.

1888.

BIENNIAL REPORT OF THE DIRECTORS
AND THE
THIRTY-FIFTH AND THIRTY-SIXTH ANNUAL REPORTS
OF THE
SUPERINTENDENT
OF THE
INSANE ASYLUM OF THE STATE OF CALIFORNIA
(AT STOCKTON.)

For the Two Years Ending June 30, 1888.



SACRAMENTO:
STATE OFFICE, : : : : J. D. YOUNG, SUPT. STATE PRINTING.
1888.

BOARD OF DIRECTORS.

OCTOBER, 1888.

ROBERT WATT, <i>President</i>	Oakland.
Appointed by Governor Irwin, 1876; reappointed by Governor Perkins, 1880; reappointed by Governor Stoneman, 1884; reappointed by Governor Waterman, 1888.	
J. K. DOAK, <i>Vice-President</i>	Stockton.
Appointed by Governor Booth, 1874; appointed by Governor Perkins, 1880; reappointed by Governor Stoneman, 1884.	
C. H. RANDALL	Sonora.
Appointed by Governor Stoneman, 1884.	
J. D. McDOUGALD	Stockton.
Appointed by Governor Stoneman, 1885.	
OBED HARVEY, M.D.	Galt.
Appointed by Governor Waterman, 1888.	

MEDICAL OFFICERS.

HIRAM N. RUCKER, M.D.	Superintendent.
WILLIAM A. WASHINGTON, M.D.	Assistant Physician.
JUNIUS D. YOUNG, M.D.	Assistant Physician.

N. M. ORR	Treasurer and Secretary of Board.
H. W. TAYLOR	Superintendent's Secretary.
T. J. KEYS	Steward.
JOSEPH D. WATSON	Supervisor.
Mrs. M. E. RAMSELL	Matron.

DIRECTORS' REPORT.

To his Excellency R. W. WATERMAN, Governor of the State of California:

In accordance with the law controlling the management and direction of the State Insane Asylum at Stockton, we as Directors submit our biennial report for the two years ending June 30, 1888, together with those of the Medical Superintendent and Treasurer, which are made a part of this report.

The management of this institution, for the past two years, has been made arduous and difficult, because of an insufficient appropriation, and the largely increased number of patients to whom it was absolutely necessary to give care and attention, although the accommodations were entirely inadequate for the purpose.

As will be seen by the report of the Medical Superintendent hereto attached, the number of patients receiving care and treatment in this asylum increased sixty-seven during the year ending June 30, 1887, and ninety-three during the year ending June 30, 1888, at which time there were sixteen hundred and forty-seven patients in the institution. This number is at least five hundred in excess of the number the buildings are designed to accommodate, and in consequence not only are the various wards excessively crowded, but the corridors and attics are necessarily used to furnish sleeping rooms for the large number of patients who have been forced upon the care of the managers of the institution.

It was confidently expected that the overcrowded condition of the wards of the asylum would be relieved to a limited extent by a transfer of patients to the new asylum at Agnews, but as is well known, that expectation has not been realized; although an appropriation was made for the support of patients at Agnews, and the amount asked for by this Board for the support of this institution correspondingly reduced, no transfer of patients has been made, and all have been retained and supported here.

It is also a noticeable fact that the commitments to this asylum have been largely in excess of those made to the Napa Asylum.

Under the circumstances it has been found impossible by the exercise of the strictest economy to meet the necessary requirements of this institution from the appropriations made by the Legislature for its support. On June 30, 1888, our expenditures exceeded the appropriation by \$12,405 21, leaving that deficiency, as shown by bills now on file with the State Board of Examiners. We estimate that there will be a deficiency of at least \$15,000 for the present fiscal year, and we respectfully ask that an appropriation of \$27,405 21 be made to cover these amounts.

Our failure to obtain the appropriation asked for in our last report, in order that many much needed improvements and repairs might be made, with a purpose of protecting and preserving the public property, and providing better facilities for the care of the wards of the State placed under our control, has rendered it impossible to carry any of the proposed plans into successful operation, while the necessity for an appropriation has been greatly increased by the delay, and the cost of some of the repairs will now be much greater than if they had been made at the proper time.

During the past two years a hay barn has been constructed. This structure was an absolute necessity, as previously the surplus fodder gathered from the farm during the summer had to be put in stacks for winter use, and in consequence became much damaged. With present facilities a supply of hay for the use of the animals kept upon the grounds during the winter months can be laid in early in the season, and its cost is thereby materially lessened.

One of the steam boilers in use at the female department building, having been condemned and pronounced unsafe by the Inspector, it was replaced by a new one: it was also found necessary to procure a new washing machine to replace one long in use in the laundry building, and which had become so worn as to be practically unserviceable.

Considerable necessary grading has been done upon the grounds and around the buildings, and the work of graveling the streets and walks within the grounds has been continued so far as practicable, and the facilities for easy communication between the several buildings and portions of the grounds correspondingly improved. During the year 1886, the balance of the appropriation of \$25,000, made by the Legislature of 1885, was expended, the heating apparatus was put in operation in the old building, and repairs were made to that structure which have very materially improved the general appearance, and added much to the convenience and comfort of the inmates.

The Act of the Legislature providing for the construction of an open canal from and along North Street in the City of Stockton, to the San Joaquin River, is now being carried into effect by this Board; and contracts have been let for the construction of said open canal, and also for laying a pipe-line from the asylum grounds connecting with the present sewerage system along said canal, for such a distance from the asylum grounds as shall insure the discharge of the sewerage matter into the canal, where it will be carried into the river and no longer be objectionable to the residents of the vicinity.

IMPROVEMENTS NEEDED.

This Board, in its present report, can but reiterate what has been said in former reports concerning the great necessity of provision being made by the Legislature for the repairs of buildings connected with this institution, and for various improvements that are absolutely demanded in order that the wards of the State here confined may have suitable accommodations, and every facility be afforded the management for giving them such attention and care as shall most conduce to their comfort, and if possible to their speedy recovery.

We approach this portion of our report with reluctance, for judging by the past, we are aware that in asking for an appropriation to carry out the various improvements and repairs absolutely necessary to protect the property of the State, and to provide for an economical and effective management of this institution, we are liable to be misrepresented, and that a certain class of would be economists, whose influence seems to be great in our legislative bodies, are not disposed to treat the great charities of the State with that broad, just, and liberal spirit, which their importance and magnitude now demand.

We must, however, repeat several of the recommendations made in our last report, and earnestly urge upon your attention—and, through you, upon the attention of the Legislature—the absolute necessity of improvements which this Board has been unable to make, because of the want of means.

The asylum building occupied by the female patients is sadly in need of repair; and, for a statement of its present condition, we refer you to the report of the Medical Superintendent, and we cordially indorse his recommendations concerning the changes and improvements necessary to be there made. A liberal expenditure should be made upon the building, in order to protect it from further damage from the elements, and also to guard and preserve the health of its inmates.

The law governing the asylum provides that its Directors shall provide suitable apartments upon the asylum grounds for the use of the Assistant Physicians and their families. This law has thus far remained a dead letter, for the reason that no appropriations have ever been made to pay for the erection of such apartments, and the management of the institution is rendered less efficient and satisfactory in consequence thereof; and, in this connection, we desire to particularly refer to the recommendations of the Superintendent, that another Assistant Physician be provided for the asylum, and would ask that authority be given this Board to employ, at their discretion, another physician, and to fix his compensation.

In order to most efficiently care for the large number of patients here confined, all the physicians should reside upon the grounds, to be within easy call in case of an emergency, and the construction of cottages to enable this result to be attained is, in our opinion, imperatively demanded.

We also cordially indorse the recommendation of the Superintendent that a residence be provided for the Supervisor.

A large boiler house should be erected at the male department, and be furnished with boilers of larger capacity to meet the wants of that portion of the institution. The boilers have been in use for a long time, and are of inadequate capacity to furnish the steam required, and by making the change proposed a considerable saving could be made in the consumption of coal, which is a very important item of expense to the institution.

We earnestly urge upon your especial attention the recommendation of the Medical Superintendent, that workshops be provided in which the patients may have employment, and we think the reasons he has given for the adoption of such a policy must receive the cordial indorsement of all whose sympathies have been awakened to the condition of the unfortunate class here confined.

A morgue is also much needed, as at present there are no suitable and convenient apartments upon the ground to be used for that purpose.

Believing that the improvements referred to in this report are imperatively demanded, and, in order that the situation might be properly presented, we employed Messrs. Percy & Hamilton, architects, to make a thorough examination of the buildings, ascertain their condition, and to make an estimate of the cost of the improvements required. A copy of their report and estimate is hereunto attached, which we respectfully submit for your consideration, and earnestly request that an appropriation of at least \$80,000 may be made for the purposes therein specified.

APPROPRIATION FOR SUPPORT.

The number of patients in this asylum at the date of this report is one thousand seven hundred. Should a transfer be made from this and the Napa Asylum of such a number as the new asylum at Agnews will accommodate, it cannot reasonably be expected that more than two hundred will be taken from this institution; this will leave one thousand five hundred to be cared for, and that number will be gradually increased by commit-

ments. To support this large number of unfortunates, for the next two years, will require an expenditure of at least \$230,000 per annum.

It should be clearly understood that the reduction in the number of patients will not proportionately reduce the cost of running this asylum: at present the institution is overcrowded, and the removal of two hundred patients would afford relief to a limited extent, yet it would not be possible to reduce the number of attendants, nor would the cost of heating, lighting, supplying water, etc., to the buildings, be lessened in the least.

The only saving that will be made to this institution by the proposed transfer will be the mere cost of feeding and clothing the number that may be removed: and these two items aggregate but about 40 per cent of the whole cost of their support.

Confidently believing that we will have your hearty coöperation in the management of the important trust submitted to our charge, we commend this great public charity to your favorable notice.

ROBERT WATT,
J. K. DOAK,
CHARLES H. RANDALL,
J. D. McDOUGALD,
OBED HARVEY,

Directors.

STOCKTON, October 22, 1888.

TREASURER'S REPORT.

OFFICE OF THE SECRETARY, BOARD OF DIRECTORS, AND
TREASURER OF ASYLUM FOR THE INSANE,
STOCKTON, CAL., July 30, 1888. }

To the Board of Directors of the State Insane Asylum:

GENTLEMEN: In accordance with the by-laws of this institution, I have the honor to present the following biennial report of the receipts and expenditures of the State Insane Asylum at Stockton for the two years ending June 30, 1888:

GENERAL FUND.

Receipts.

July 1, 1886, balance as per last biennial report	\$35,146 44
August 10, 1886, Warrant No. 360	16,172 62
September 11, 1886, Warrant No. 2,328	16,549 23
October 8, 1886, Warrant No. 3,827	17,045 52
October 10, 1886, Warrant No. 5,154	18,425 53
December 8, 1886, Warrant No. 6,224	19,719 79
January 5, 1887, Warrant No. 6,511	19,920 08
January 30, 1887	19,847 94
February 26, 1887	17,389 02
April 28, 1887	16,891 41
April 28, 1887	16,722 30
July 9, 1887, Warrant No. 15,198	16,380 20
August 11, 1887, Warrant No. 99	16,227 52
September 13, 1887, Warrant No. 2,780	16,618 87
Transferred from Contingent Fund	18 50
October 11, 1887, Warrant No. 3,800	16,577 95
October 28, 1887, Warrant No. 5,373	16,533 23
December 12, 1887, Warrant No. 6,955	17,531 51
January 10, 1888, Warrant No. 7,934	19,448 78
February 6, 1888	19,447 74
February 29, 1888	19,474 35
March 10, 1888, transferred from Contingent Fund	13 25
March 27, 1888	17,075 42
March 27, 1888, balance of appropriation thirty-seventh fiscal year	133 00
March 27, 1888, balance of appropriation thirty-eighth fiscal year	4,881 01
May 9, 1888	18,731 52
May 28, 1888	17,722 33
	<hr/>
	\$430,745 06

Disbursements.

Amount paid for general support, as per vouchers now on file, for the year ending June 30, 1887	\$211,309 66
For year ending June 30, 1888	212,392 11
Balance in General Fund June 30, 1888	7,043 29
	<hr/>
	\$430,745 06

CONTINGENT FUND.

Receipts.

Board, etc., for year ending June 30, 1887	\$8,478 89
Steward's sales for year ending June 30, 1887	2,598 48
Board, etc., for year ending June 30, 1888	9,470 80
Steward's sales for year ending June 30, 1888	2,221 97
	<hr/>
	\$22,770 14

Disbursements.

Hay barn	\$3,871 36	
Grading and graveling	2,931 38	
Interest and expressage	3,629 18	
Sundry improvements and repairs	879 75	
Dairy stock and pigs	771 15	
Superintendent's expenses to convention of physicians	325 00	
New boiler	670 00	
New washing machine for laundry	520 00	
Wagon for hauling coal	300 00	
Furniture	355 55	
Advertising and printing	35 50	
Stationery and sheet music for band	30 30	
Trees and vines	18 50	
Laundry work	25 95	
Transferred to General Fund	31 75	
Transferred to Heating and Repairs	1 62	
Deficiency shown by last biennial report	2,325 13	
Balance June 30, 1888	6,048 02	
		\$22,770 14

HEATING AND REPAIRS.

Receipts.

August 10, 1886, Warrant No. 359	\$919 52	
September 10, 1886, Warrant No. 2,327	1,408 65	
January 10, 1887, Warrant No. 6,511	2,433 04	
Transferred from Contingent Fund	1 52	
		\$4,762 73

Disbursements.

Paid on contract for heating apparatus	\$2,434 56	
Paid sundry bills, as per vouchers on file	2,328 17	
		\$4,762 73

All of which is respectfully submitted.

N. M. ORR, Treasurer.

SUPERINTENDENT'S REPORT.

YEAR ENDING JUNE 30, 1887.

To the Directors of the Stockton State Insane Asylum:

SIRS: I herewith submit my annual report for the year ending June 30, 1887. As another report from the Superintendent will be due before the compilation of your biennial report to the Governor, I will append no extended remarks on this occasion.

The daily per capita cost of maintaining the patients was 38 cents. Last year it was 37 cents and 2 mills; in 1885, 41 cents; in 1884, 41 cents. This includes everything—food, clothing, care, and medical attendance.

Respectfully,

W. H. MAYS, M.D.,
Superintendent.

SUPERINTENDENT'S REPORT.

YEAR ENDING JUNE 30, 1888.

To the Directors of the Stockton State Insane Asylum :

SIRS: In accordance with the Act organizing this asylum, the following report of its operations during the year ending July 1, 1888, is respectfully submitted:

From the appended tables it will be seen that at the beginning of the fiscal year we had one thousand five hundred and fifty-three patients, and at its close one thousand six hundred and forty-seven, an increase in our permanent population of ninety-three. In the year preceding, the numerical increase was sixty-seven. The increase at Napa Asylum during the same biennial period averages but seventeen each year. Thus it will appear that nearly the entire burden of providing for the accumulating surplus of the State's insane has been laid upon this asylum.

There were four hundred and sixty-three admitted during the year, against four hundred and forty-seven in the preceding year. About 9 per cent were readmissions.

The deaths during the year were one hundred and thirty, against one hundred and thirty-three the forerunning year, and one hundred and thirty-five the year before that. A lower death rate than that of last year, 6 per cent on the number under treatment, is rarely attained. In Table "E" the causes of death are given. One death occurred from suicide, a Chinese convict who hanged himself.

Of the two hundred and thirty-three discharged, two hundred and fourteen were sent away recovered, a percentage of 46.22 on the admissions during the year.

The per capita cost of maintenance was 38 cents in 1887, and 36.9 cents in 1888. This low rate is not the result of any special effort to reduce the cost of supporting the patients, but is due to the great increase in the number cared for, while at the same time the working force of the establishment has remained the same, or nearly so.

DISCHARGED "RECOVERED."

In returning a patient to the world again, shall his certificate of discharge read "recovered," or merely "improved?" The question is one fraught with serious possibilities to the newly liberated person. The indorsement "recovered" restores him to citizenship, anything short of that does not. From being civilly dead, it makes him again a living integer in the commonwealth, restoring to him what he loses when committed as insane, his forfeited duties and privileges, public and private, his social and domestic rights, his civil and political rights. Unless discharged "recovered," his status is left in doubt, his power to make a contract is disputable, his future acts are of questionable validity. He is still presumably insane. He may present himself at Court and demand that his sanity be then and there determined and declared, but how few do this. A vexatious

case of this nature was on trial recently in the Superior Court of Alameda County, the point at issue being the legality of a deed transferring real estate, which deed was made many years ago by a former patient of this asylum a few months after his discharge.

For this reason I always endeavor to give the outgoing patient the benefit of the doubt, when there is any doubt. Recovery is a relative term at best. An individual who has been insane seldom gets back quite to where he was before the attack; but the same thing may be said of recovery from all serious structural diseases. After an attack of pneumonia the lung may recover to great extent its usefulness, but it never regains its full integrity. The joint that has once undergone acute rheumatism is never a sound joint again. So after disease of the brain tissue we may often find left behind an indefinable lowering of the mental and moral tone, but the verdict "recovered" must not on this account be withheld. In a world where, without indorsing the dictum of the dyspeptic philosopher that mankind are "mostly fools," we cannot deny that a perfectly sound mind is as rare to find as a perfectly sound body, it follows that many persons with slightly damaged brains must necessarily be included within the pale of sanity and accountability.

THE FREQUENCY OF INSANITY.

The numbers admitted to the two State Asylums during the past four years are as follows: In 1885, eight hundred and twenty; in 1886, eight hundred and fifty; in 1887, eight hundred and ten; in 1888, eight hundred and eighteen. Considering the sturdy growth of the State in this period, these figures show a falling off in the ratio of those attacked with insanity.

At the close of the year, the number of inmates in the two asylums was three thousand one hundred and fifteen. Estimating the population at one million one hundred and fifty thousand, the proportion of insane to population is one in three hundred and seventy. Comparing this with the ratio of insane in other countries and States, it will be seen that there is no foundation for the supposition that insanity is unduly prevalent here. Australia has one insane in three hundred and sixty-nine; England, one in three hundred and sixty-two; Massachusetts, one in three hundred and seventy; New York, one in three hundred and eighty.

Many patients of the imbecile class are deposited here who would not be received in any other asylum in the world; many who are decrepit, aged, harmless, and broken down; who sometimes, too feeble to walk, are carried in and never leave their beds afterwards. This class should properly be taken care of in county almshouses. A nicer discrimination is needed in the commitment of persons to the asylum. The popular error still prevails in some quarters that simply to establish the fact of insanity is all that is necessary.

In determining whether a patient shall be sent to the asylum, the following questions are to be considered:

First—Is he insane?

Second—If so, is his insanity of such a type as to render him dangerous to person or property? *

Unless both of these questions can be answered in the affirmative, the

*To these a third consideration might be added: "Is there a reasonable prospect that his insanity, even if not of such a nature as to require his seclusion, could be benefited by special treatment at an asylum?" An asylum should be, first and foremost, a hospital for the cure of curable cases; but the State law fails to recognize this, its highest and latest acquired function, as a specific reason for the commitment of a patient thereto. Nor, in our present overcrowded condition, can we lay claim to the full exercise of this higher function.

commitment of the patient is a direct infringement of the law. Nothing could be more succinct and unequivocal than the wording of the statute on this subject. "No case," it provides, "of idiocy, imbecility, simple feebleness of intellect, or old case of harmless dementia, or of any class of incurable and harmless insanity, or of delirium tremens, shall be sent to the asylum."

EVIL OF OVERCROWDING.

The number of patients in this asylum at the close of the fiscal year was one thousand six hundred and forty-seven. At present writing (September 12th) it is one thousand six hundred and seventy. The asylum will properly accommodate one thousand one hundred and fifty—eight hundred males and three hundred and fifty females—calculating on a basis of fifty surface feet to each inmate. So largely has it outgrown its capacity, that the expected removal of one hundred and eighty patients to Agnew Asylum in December will relieve us only to a scarcely appreciable extent.

In the task of taking care of five hundred more patients than the asylum is designed to hold, the endeavor has been to place the burden where it would be the least felt. While the wards containing the chronic and harmless patients have felt the brunt of the pressure, it has been found impossible to avoid hampering by surplusage to some extent the section devoted to acute and curable cases. Happily our climate is such that there is hardly a day when the most crowded wards cannot be almost entirely emptied of their occupants and thrown open for purification; a fortunate circumstance when, besides the bedrooms and dormitories, the floors of halls, corridors, and doorways are nightly used as sleeping apartments.

To overcrowd the insane is to impair the usefulness of the asylum and subvert good management. It interferes with the proper moral and hygienic treatment of the patients and lessens their chance of restoration. It reacts upon their physical health, as well as upon their mental progress. No class of people are more readily influenced by their surroundings; close contact makes them uneasy and irritable and is provocative of quarreling.

The magnitude this evil is assuming, and the seeming remoteness and inadequacy of the measures hitherto taken for its redress, have given me serious thought, not unmixed with a sense of discouragement. The failure of this great State to fulfill its duty toward its hapless wards, the insane, cannot be viewed without concern. I trust that our lawmakers will realize how nearly this matter touches the honor and good name of the State, and will take vigorous steps that such a state of things be not permitted to exist.

THE PROSPECTS OF RELIEF.

To provide for the accumulating increase is the problem before the people of this State. The Hospital for Chronic Insane at Agnew is expected to receive patients in December, to the number of three hundred and sixty, one hundred and eighty from each State asylum. A second block of wards is now in process of construction there, which will be ready for occupancy in a year or two, and which will accommodate two hundred and forty patients, or one hundred and twenty from each asylum. The removal, therefore, of one hundred and eighty patients this year, and one hundred and twenty in 1890, or three hundred in all, is the utmost in the way of relief that this asylum can look for, under present arrangements. How far will this go toward reducing our numbers to the proper limit? At the rate this asylum has been increasing in the last four years, with one thousand six hundred and seventy-five in September, 1888, we should have one thousand

eight hundred and fifty in September, 1890. Deducting three hundred, which is all Agnew can be expected to relieve us of by that time, there will still be one thousand five hundred and fifty inmates here two years hence, or four hundred more than the institution has room for.

This fact must be held prominently in view: that one hundred are added yearly to the number of insane the State has permanently to take care of. Our insane population being three thousand one hundred and fifteen this year, it will be three thousand two hundred and fifteen next year, and three thousand three hundred and fifteen the year after. This vast aggregate is now crowded into two asylums, when it ought to be contained in at least four.

No asylum should contain more than seven hundred patients, to obtain the best results of what may be called a thoroughly paternal administration. With a number no greater than this, the Superintendent can know and take an interest in each and every patient, and can keep within his grasp every detail of management. The day for the building of huge caravansaries, where the individual is lost in the mass, has gone by. The Agnew Asylum should not be enlarged beyond a capacity for seven hundred inmates. To add to institutions once established forms a strong temptation to pseudo-economists, but the tendency is a vicious one. Benevolence should be the corner-stone of an asylum, and the good of the patients the objective point; aims which are difficult of attainment in immense and unwieldy institutions.

AN ASYLUM FOR SOUTHERN CALIFORNIA.

The prosperous cluster of counties that forms the southern portion of the State send their insane mainly to this asylum, about fifty patients a year being admitted from Los Angeles County alone. The expense to the State of transporting patient, Sheriff, and often Sheriff's assistant, over a distance of five hundred miles, is a consideration of some weight. But a more serious objection is the injury so long a journey is liable to inflict upon a patient. In the early stages of brain disease, more than in any other form of bodily ailment, quietude, rest, and freedom from excitement are of first importance. In exposing such a sufferer to the fatigues of a railroad journey, which in the summer months a strong man cannot contemplate with equanimity, is to do him grievous, and sometimes irretrievable, harm.

Again, the remoteness of the southern portion of the State enforces a severance of the natural ties of affection, which, to a humane people, should speak in forcible tones for nearer asylum facilities. To the poorer classes it works a distinct hardship; the distance and the expense of travel present an impassable barrier, and lay an embargo on the natural expression of the feelings. They cannot visit their friends, no matter how eagerly they may long to do so. It is true that the visits of relatives are not always beneficial, and sometimes must be forbidden as likely to retard restoration. But there are times when the sight of a familiar face will do good, and a talk with one from home will arouse the dormant faculties, tend to banish despondency, and give a decided impetus towards recovery.

It is not likely that the steady inpour of people into the State will be materially checked, at any rate for a number of years to come. One of the richest and most salubrious portions of the earth's surface, California may some time be one of the most populous. The State is adding to its population forty thousand annually, which means a certain fixed and inexorable increase in our number of insane. This increment must be pro-

vided for, and the construction of an asylum near Los Angeles, to contain seven hundred patients, should not be delayed. The transportation of the insane of San Bernardino and San Diego Counties, a distance of six hundred miles, equal to a journey from Beaufort, North Carolina, to New York, is a cruel, wasteful, and barbarous proceeding.

I will indicate still further the line upon which, to my view, advancement should be made. The asylum system of the State will never be complete till the City of San Francisco shall have its own asylum, situate on the peninsula, near by. There is no propriety in a large and wealthy metropolis deporting its insane one hundred miles into the interior. The daily public exhibition, on trains going to Stockton and Napa, of patients in violent and sometimes revolting phases of insanity, is not creditable. Not only are such scenes distressing to sensitive people, but an injury is thereby liable to be done to the patient's future welfare, for he is very apt, after recovery, to remember distinctly, and with acute humiliation, his long exposure to public gaze. There is no city of the magnitude of San Francisco that has not long had its own asylum conveniently adjacent.

If San Francisco took care of its own insane, the rest of the State could be systematically divided into asylum districts, as is done in the Eastern States. The northern, northwestern, and north central counties would send to Napa; the Sacramento and San Joaquin Valleys would be tributary to Stockton; the western counties would supply Agnew, and the southern counties Los Angeles. The pro rata cost of support of each patient should then be charged to the county he came from, each county thus bearing its own burden. It may not be generally known that the State, and not the county, pays the cost of transportation and mileage of patients. This is a curious and unique arrangement. In effect, the State offers a premium to county officials to hunt up patients and bring them here. If the expense of transportation were placed where it belongs, on the county, there would be less inducement for the authorities of county hospitals and almshouses to unload their helpless and bedridden cases upon us.

THE INSUFFICIENT MEDICAL STAFF.

The bill introduced last session providing for additional medical aid failed to become a law, to the unfeigned regret of all who have the well-being of the insane at heart. Upon the two Assistant Physicians has devolved the daily care of nearly seventeen hundred patients, the Superintendent having, in the stress of executive and other duties, but little time for actual ward work. Were this a lunatic asylum in the eighteenth century sense, a place simply to hold or herd the insane to keep them out of harm's way, there would be nothing in this fact to occasion comment. But since the nature of mental disease has come to be better understood the asylum has another and a higher purpose. It should be a hospital for the cure of mental disease. In its earlier phases insanity is radically curable, if the proper medical and moral means are applied. To apply them properly requires earnest, efficient, individualized effort on the part of the asylum physician. Not only is skill in this specialty demanded of him, but also careful and laborious study and close daily personal observation of the patients.

Nor are his energies to be regarded as absorbed in the treatment of curable cases alone, although they naturally engage his highest efforts. Where a cure cannot be looked for, alleviation may often be brought about, and this by means other than medical. The regular visit of the physician to the wards, and the prescribing for those who are sick, constitute but a small

part of the therapeutic measures he is supposed to exercise. On the whole, moral treatment is more efficacious than medical. It is a part of the treatment to learn the histories of the patients, to encourage self-respect, to awaken sluggish energies, to cheer and console, to lift them out of their morbid selves, to provide suitable employment, to regulate bodily exercise and recreation. For the better attainment of these ends, more physicians are necessary.

The material comfort of the insane is liberally provided for. They are well fed, well clothed, well housed, well attended. But this is not enough; an almshouse could do as much. The obligation is as imperative on the State to furnish the means to scientifically treat and cure the mentally afflicted as to supply bread to fill their stomachs and blankets to keep them warm. California has usually taken advanced ground in problems of civil polity, and in all matters concerning moral and intellectual progress has moved rapidly into alignment with the spirit of the age. I am certain, therefore, that my efforts towards a higher standard in the care of the insane will not go unseconded.

LEAVE OF ABSENCE.

During the year, sixty-five patients have been allowed to leave the asylum on probation, in every case in the care of a friend or relative who undertakes to be responsible and to return them whenever necessary. Of these only twelve have been returned for further treatment. This leave of absence or furlough is usually granted to convalescents, and is generally a prelude to final discharge.

Even when there is no prospect of recovery, there are many patients here who might be returned to ordinary life, for a time at least, if their friends were able to care for them comfortably, and desirous of doing so. Of this uniformly quiet, harmless, and well disposed class, a large proportion would doubtless be kept at home, were it not for the feeling of disgrace so many attach to the fact of having an insane relative.

EMPLOYMENT OF PATIENTS.

In my biennial report for 1886, attention was called to the need of workshops and other facilities for the useful employment of patients. A bill for the construction of workshops passed both houses last session of the Legislature, but failed to meet the approval of the Governor. I have found enforced idleness so positive an injury in many cases, that this great want cannot be too earnestly dwelt upon. Work is a well known curative agent, its value being particularly marked in the stage of convalescence. Excitement is then subsiding, and the patient is beginning to realize his condition, although still brooding over fancied wrongs and vexing his spirit with shadowy hallucinations. It is here that well directed occupation acts as a benign healer, turning his thoughts from himself into new and healthier channels, and hastening recovery. His morbid discontent is diverted, his self-consuming restlessness finds an outlet; he forgets, in the absorption of some congenial pursuit, his troubles real and imaginary. Nor is it to convalescents alone that work proves a blessing. In insanity of long standing, stagnation and idleness tend to promote still further degeneration, while manual employment, even of the most automatic kind, stirs and engages the remnants of intelligence in the darkened brain and postpones absolute dementia.

Our working force of patients, employed either indoors or out, averages three hundred, although varying from day to day. To many, farm or garden work would be unsuitable or detrimental. No one is compelled to work, but when it is thought that benefit might follow, they are encouraged to do so, however little their labor may be worth in a remunerative sense. In some asylums the manufacture and repair of mattresses is an important feature; in others, that of brooms, baskets, mats, shoes, etc. Even if of no pecuniary value to the State, the labor of a much larger number of our inmates should be utilized, inasmuch as employment is a recognized means of furthering their welfare and happiness.

IMPROVEMENTS REQUIRED.

New Boilers and Boiler House.

Although the male department has doubled its size in the last decade, no addition has been made to its boiler capacity. Two boilers only are doing the work, a number entirely too small. When either of the boilers requires cleaning out, the service of heat and water to a large portion of the asylum must be stopped—a source of discomfort, and in cold weather, actual suffering. A suitable boiler house, with a new set of boilers of larger capacity, is one of the most urgent needs of the institution.

New Laundry.

The room adjoining the engine house of the female department, used as a laundry and ironing room, is ill adapted for the purpose, both from its location and its cramped dimensions. Under suitable conditions, work in the laundry would be a pleasant and useful form of occupation for a large number of harmless, able-bodied female patients; but in the close, hot room in which it is now conducted, it partakes somewhat of the nature of a punishment. I would recommend that a detached laundry be erected to the north of the present location, the lower floor to comprise a machinery room, an ironing room, and a sorting room. A more effective apparatus for drying is needed in both departments.

During the year, a new brass washing machine has been substituted for the old wooden washer, but additional modern machinery is greatly needed to render this department equal to the demands placed upon it.

New Plumbing—Female Department.

The plumbing and piping of this building is, as a whole, so worn and defective as to form a serious menace to the health of the inmates. Some portions of the system are twenty years old, dating from the erection of the structure in 1867. In some parts, no traps whatever were put in to arrest the ascent of deleterious gases into the rooms and wards. Although almost constantly under repair, the pipework both above and below ground is in such a condition of decay as to favor contamination, and needs a thorough renewing in accordance with modern sanitary ideas.

Ventilation of Female House.

The shafts conveying impure air from all three stories of this building open into the attics. One hundred patients sleep in these attics. So flagrant a departure from the laws of hygiene it would be hard to parallel. Of course, it was intended originally to carry these ventilating shafts through the roof, and, moreover, the occupation of the attics as dormitories was

never designed or anticipated. The Directors of this asylum have repeatedly drawn the attention of legislative visiting committees to this evil, and asked for the means to correct it. Two years ago a sum of money was applied for, for the general repair of the female building and the correction of existing defects, the completion of the ventilating system being one of the principal features.

Painting and Cementing the Exterior of Female House.

The walls of the whole southern exposure of the building become water-soaked by each succeeding winter's rains, discoloring the plastering of the walls and ceilings of the wards and causing it to fall off in large pieces. The brickwork requires protecting with a coating of cement, with two coats of paint superadded. The north wing has been cemented exteriorly, presenting a pleasing contrast to the rough and unfinished appearance of the rest of the building.

General Dining-room for Female Patients.

No more effective measure for the relief of the congestion of this building could be proposed than the construction of a dining-room capable of seating one hundred and seventy-five or two hundred female patients. By this means the several ward dining-rooms could be utilized as dormitories, and the daily carrying of food to distant parts of the house dispensed with. This improvement would be in the line of true progress, combining comfort and convenience with cleanliness and economy. The upper floor might be utilized as a sewing-room. The rooms now used by the seamstress and her assistants, including a large number of patients, are located in the attic, occupying inconvenient and unsuitable quarters.

Dead-House.

Since 1881 the institution has been without a dead-house or mortuary, the structure theretofore in use for the reception of the dead having been removed to make room for the new asylum edifice. A brick building of three rooms, with cement floors, would meet the requirement, and, to preserve as low a temperature as possible during summer, a story or half-story above.

Male Department Kitchen.

The location of this, the chief kitchen of the institution, where the food for one thousand two hundred patients is prepared, is particularly objectionable. It is situated directly underneath three large wards, into which, and indeed throughout the whole administrative building, the odors inseparable from the cooking processes constantly rise and permeate, so much so that no amount of ventilation will remove the undesirable aroma. But a still greater benefit derivable from the proposed removal of the kitchen would be the amount of much-needed room it would give us for administrative purposes. The business of the institution could be more suitably carried on if additional office-rooms could be provided. Toilet-rooms are also wanted, and the dispensary should be removed to the ground floor from its present unhandy location upstairs.

Houses for Assistant Physicians.

The law organizing the asylum specifies that the Physicians shall reside on the asylum grounds, but, owing to the absence of quarters for their

accommodation, the Assistant Physicians have never done so. It is to be hoped that this wise provision of the law will be carried out, and that houses will be erected on the premises so that the medical officers may be within call at all hours. A residence should be built for the Supervisor, whose presence in the institution is especially necessary.

Improvement of the Grounds.

No special appropriation for improving and beautifying the grounds has ever been made. Much is required to be done in the way of repairing and graveling the streets and sidewalks, laying out the ornamental grounds in good shape, planting trees and shrubbery, and constructing new streets, drives, and sidewalks.

During the period covered by this report the asylum has proceeded quietly on its way, two years unmarred by accident or untoward event of any kind being added to its history. The spell of unprecedentedly cold weather in January of this year caused temporary discomfort in a portion of the south building, by freezing and bursting the hot water pipes. Stoves were at once called into requisition, a return to the mode of heating formerly in vogue.

The asylum had, last March, the honor of a visit from Mr. F. H. Wines, Secretary of the New York Board of Charities. Other persons officially interested in the insane have from time to time paid us visits of inspection; and the public generally, always welcome, have availed themselves freely of our liberal visiting hours and manifested much interest in the working of the asylum.

I am pleased to be able to state that the custom of transporting female patients to the asylum in charge of a male attendant or deputy only has been stopped, with the coöperation of the Sheriffs.

The importance of relaxation and amusement as a remedial agent in the care of the insane has received full recognition. During winter, entertainments and dances have been held at regular intervals in the assembly hall. The amateur performances conducted by male and female attendants were eminently and gratifyingly successful. Narrations or representations of a tragic nature, or such as would tend to unduly excite the emotions, are scrupulously avoided. Many ladies and gentlemen from the city have kindly volunteered their aid in amusing and interesting the patients, among whom, with grateful thanks, may be mentioned Mrs. E. Oullahan, Mrs. C. Dohrmann, Misses Gertie and Amy Hopkins, Gertie Welsh, Louisa and Edith Dohrmann, Lizzie and Nannie McCarty, Cleo. Pritchard, Esther and Fannie Marks, Esther L. Needham, Nellie S. White, Emma Worden, Nellie M. Miller, Rosie Roan, Mamie Miller, and Annie Fyfe; Messrs. J. Barrett, Jr., H. Prangle, G. Arnold, G. Earle, M. Crane, R. Boyce, R. Condy, G. Franks, E. Condy, J. McCarty, R. Coggeshall, L. Harkness, J. Gill, W. Kirkman, J. Wilks, G. Hermann, W. Carey, and J. M. Reynolds. Thanks are also specially due to the Stockton Sing Verein, comprising Messrs. Schneider, Wurth, Simon, and Felchin.

The following friends have, with much kindness, sent donations: Mrs. Abramsky, several packages of illustrated papers and magazines; Mr. H. Baldwin, frequent liberal donations of books and magazines; Yosemite Club, magazines and periodicals; editors of "Stockton Mail," several packages of exchange newspapers; Dr. R. K. Reid, the former Superintendent, a rare and valuable volume of the reports of this asylum from 1851 to 1856.

An appeal made a year ago to the editors throughout the State and coast

for gratuitous copies of their newspapers, for the use of the patients, met with a ready and most generous response. The following papers have been regularly received, for which we feel deeply indebted to the respective editors:

Daily.

San Francisco Chronicle, Examiner, Call, Alta, Courier de San Francisco, Abend Post, Evening Post, Stockton Independent, Stockton Evening Mail, Sacramento Record-Union, Sacramento Bee, San José Times, San José Herald, Oakland Times, Oakland Enquirer, St. Helena News, Fresno Republican, Virginia City Chronicle, San Bernardino Courier, Martinez Item, Nevada City Transcript, San Diego San Diegan, San Luis Obispo Republican, Santa Cruz Sentinel.

Weekly.

San Francisco Chronicle, Examiner, Evening Post, Journal of Commerce, Report, Spirit of the Times, Occident, Jewish Progress, Wasp, Argus, Rural Press, Scientific Press, Political Record, Monitor, Journal, Franco-Californien, Voce del Popolo, Stockton Independent, Stockton Mail, Stockton Record, Sacramento Record-Union, San José Times, Amador Dispatch, Anaheim Gazette, Anderson Enterprise, Arcata Union, Antioch Ledger, Alameda Encinal, Biggs Argus, Berkeley Advocate, Bieber Mountain Tribune, Benicia New Era, Colusa Herald, Colusa Sun, Contra Costa Gazette, Chicago Park Times, Colton Semi-Tropic, Cloverdale Reveille, Dixon Tribune, Downieville Messenger, El Dorado Independent, El Dorado Republican, Escondido Times, Eureka Sentinel, Elko Free Lance, Eureka Western Watchman, Gilroy Gazette, Gilroy Advocate, Galt Gazette, Hollister Free Lance, Hanford Sentinel, Humboldt Standard, Ione Valley Echo, Inyo Independent, Kern Echo, Kern Californian, Los Angeles Tribune, Los Angeles Mirror, Los Angeles Herald, Los Angeles Porcupine, Los Angeles L'Union Nouvelle, Lakeport Avalanche, Lakeport Democrat, Lodi Sentinel, Lassen Mail, Lassen Advocate, Los Gatos News, Livermore Echo, Lompoc Record, Lower Lake Bulletin, Modesto Herald, Modesto News, Mariposa Gazette, Marysville Appeal, Murietta Transcript, Monterey Democrat, Monterey Argus, Mendocino Beacon, North San Juan Times, Napa Reporter, Oakdale Graphic, Orland News, Ontario Record, Oceanside Star, Petaluma Courier, Petaluma Argus, Placer Herald, Placer Argus, Plumas National, Perris Valley Leader, Placer Republican, Placerville Mountain Democrat, Rohnerville Herald, Red Bluff Sentinel, Santa Ana Blade, Solano Times, Santa Ana Standard, San Andreas Prospect, San Andreas Chronicle, Santa Barbara Herald, San Leandro Reporter, Santa Clara Journal, San Luis Obispo Mirror, San Miguel Messenger, San Rafael Tocsin, Shasta Index, Sierra County Farmer, St. Helena Star, Sierra Valley Leader, Santa Ana Herald, San Diego Union, Sonora Democrat-Banner, San Bernardino Times, San Benito Advance, Sonoma Democrat, San Jacinto Register, San Mateo Times, Scott Valley News, Sierra Tribune, San Bernardino Index, Tulare Times, Tulare Free Press, Tuolumne Independent, Templeton Times, Ukiah Press, Vacaville Reporter, Ventura Democrat, Ventura Reporter, Ventura Free Press, Visalia Delta, Watsonville Pajaronian, Watsonville Transcript, Winters Express, Yolo Mail, Walker Lake (Nev.) Bulletin, Central Nevadan, Chehalis (W. T.) Bee, Corvallis (W. T.) Gazette, East Oregonian, Oregon City Enterprise, Oregon City Journal, Albany (Or.) Herald and Disseminator, Oregon Plain Dealer, Oregon Statesman, East Washingtonian, Palouse City (W. T.) News, Kittitas (W. T.) Localizer, Lyon County (Nev.) Times, Lewis County (W. T.) Bee, Seattle (W. T.)

Press, Seattle (W. T.) Post-Intelligencer, Tacoma (W. T.) News, Inlander (W. T.) Boomerang, Walla Walla (W. T.) Journal and Watchman, Yamhill (Or.) Reporter, Spokane Falls (W. T.) Tribune.

The dairy, under the able management of Mr. Acker, is a model of thrift and neatness, and is yearly assuming a more important place in the domestic economy of the institution. The average yield of milk is over one hundred and ten gallons daily, which is distributed among the several departments every morning, proving of particular value in the sick wards, where a nutritious and easily assimilated article of diet is indicated. We shall, in a very few years, be able to boast of the finest herd of Holstein cattle in the State.

The garden has responded to the skill and energy of Mr. Peterson, the Gardener, by an unwonted productiveness, the output of vegetables and produce being unusually large in comparison with former years. Our alfalfa fields are as much a source of beauty as of profit. The piggery, that profitable but unsavory appendix, will quickly become a thing of the past, arrangements having been consummated for its abolition.

The experienced Matron, Mrs. Ramsell, continues to give to the discharge of her duties the same attention and fidelity as in former years.

The Steward, Mr. Keys, still renders his efficient aid in the economical management of the institution. The supply department, and indeed the property of the State as a whole, over which he has general oversight, was never better looked after.

To the other officers of the asylum a full recognition is extended of their active and conscientious attention to the interests of the establishment.

It gives me sincere pleasure to testify to the efficient manner in which the attendants have performed their duties. They have shown a commendable zeal and an intelligent interest in their work: and the condition of the wards, and the personal appearance of the patients, even where the overcrowding has been greatest, has been such as to deserve high praise. A few have been found wanting in those qualities that mark the good attendant, and have been requested to seek more suitable employment, but as a rule a high morale prevails throughout their ranks, and a sound understanding exists of the serious nature of the duties and responsibilities demanded of them.

To Doctors Langdon and Washington, my associates in office, I desire to express my sense of appreciation for hearty support and coöperation in the labors of the asylum. The diligent and devoted spirit in which they have fulfilled their unusually arduous duties will always be gladly remembered.

To you, members of the Board, allow me to express publicly my appreciation of your kind, ready, and courteous support, and to thank you for the full measure of confidence I have received at your hands.

W. H. MAYS,
Superintendent.

STATISTICAL TABLES ACCOMPANYING THE SUPERINTENDENT'S REPORT.

The Fiscal Year 1887 begins July 1, 1886, and ends June 30, 1887.

The Fiscal Year 1888 begins July 1, 1887, and ends June 30, 1888.

MOVEMENT OF PATIENTS.

	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Number of patients at beginning of fiscal year	1,075	411	1,486	1,127	426	1,553
Admitted during year	328	86	414	342	121	463
Whole number under treatment	1,403	497	1,900	1,469	547	2,016
Discharged recovered	152	27	179	160	54	214
Discharged improved	9	9	18	8	7	15
Discharged unimproved	3	6	9	3	1	4
Died	104	29	133	101	29	130
Escaped	8	—	8	7	—	7
Total discharged, died, and escaped ..	276	71	347	279	91	370
Number remaining at close of fiscal year.	1,127	426	1,553	1,190	456	1,646

TABLE A.

Counties from which Patients were Admitted.

COUNTIES.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Alameda	21	10	31	18	9	27
Amador	4	1	5	6	—	6
Butte	11	1	12	6	4	10
Calaveras	2	—	2	4	3	7
Contra Costa	4	—	4	4	1	5
El Dorado	1	1	2	2	—	2
Fresno	10	6	16	11	3	14
Inyo	1	—	1	1	—	1
Kern	9	—	9	4	—	4
Los Angeles	35	7	42	31	11	42
Marin	—	—	—	1	—	1
Mariposa	3	—	3	3	—	3
Merced	2	—	2	10	—	10
Modoc	—	1	1	—	—	—
Monterey	7	—	7	4	6	10
Nevada	5	3	8	8	2	10
Placer	6	2	8	3	—	3
Plumas	1	—	1	—	—	—
Sacramento	14	2	16	14	11	25
San Benito	3	1	4	4	1	5
San Bernardino	13	1	14	12	2	14
Carried forward	152	36	188	146	53	199

TABLE A—Continued.

COUNTIES.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Brought forward.....	152	36	188	146	53	199
San Diego.....				7	3	10
San Francisco.....	104	37	141	100	51	151
San Joaquin.....	25	4	29	24	8	32
San Luis Obispo.....		1	1			
San Mateo.....				3	1	4
Santa Clara.....	11	4	15	18	4	22
Santa Cruz.....				1		1
Shasta.....		1	1	5		5
Sierra.....	3	1	4			
Siskiyou.....	3		3	3		3
Solano.....				2		2
Stanislaus.....	5		5	5		5
Sutter.....	2		2		2	2
Tehama.....	4		4	4		4
Tulare.....	3	2	5	8	1	9
Tuolumne.....	4		4	1		1
Yolo.....				1		1
Yuba.....	3		3	3	1	4
State Prison—San Quentin.....	9		9	7		7
State Prison—Folsom.....				1		1
Totals.....	328	86	414	339	124	463

TABLE B.

Nativity of those Admitted.

NATIVITY.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
<i>United States.</i>						
Alabama.....	1		1	1		1
Arkansas.....	1		1			
California.....	24	9	33	24	14	38
District of Columbia.....		1	1			
Georgia.....	1		1	3		3
Illinois.....	8	2	10	3	1	4
Indiana.....	1		1	1	2	3
Iowa.....	2	1	3	2	2	4
Kansas.....	1	1	2			
Kentucky.....	5	2	7	2		2
Louisiana.....	2	1	3	1	1	2
Maine.....	6	3	9	4	2	6
Maryland.....	3		3	3	1	4
Massachusetts.....	12	1	13	8	5	13
Michigan.....				1		1
Mississippi.....				1		1
Missouri.....	4	1	5	6	1	7
New Hampshire.....	1		1	1	1	2
New Jersey.....	1		1	1		1
New Mexico.....	1		1			
New York.....	13	5	18	16	11	27
North Carolina.....					1	1
Ohio.....	8	1	9	7	3	10
Oregon.....	1		1			
Pennsylvania.....	8	2	10	8	3	11
South Carolina.....	2		2	1		1
Carried forward.....	106	30	136	94	48	142

TABLE B—Continued.

NATIVITY.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Brought forward	106	30	136	94	48	142
Tennessee	2		2	5	2	7
Texas	1		1		1	1
Utah				1		1
Vermont	2		2	3		3
Virginia	3		3	5	1	6
West Virginia					1	1
Wisconsin	3	1	4	3	1	4
United States	20	4	24	15	4	19
Totals	137	35	172	126	58	184
<i>Foreign Countries.</i>						
Australia		1	1	2	1	3
Austria	5	1	6	3		3
Azores	2		2	4	1	5
Belgium	1		1			
Canada	3	3	6	5	4	9
Chili	3		3			
China	12	1	13	18		18
Costa Rica		1	1			
Denmark	2	1	3	5		5
England	16	5	21	24	5	29
Finland	1		1			
France	13		13	11	1	12
Germany	40	12	52	36	14	50
Greece				2		2
Ireland	42	17	59	43	20	63
Italy	8	1	9	11		11
Japan	1		1	1		1
Java	1		1			
Jersey Islands					1	1
Mexico	5	1	6	6	2	8
New Brunswick	1		1			
New Zealand	1		1			
Norway				3	1	4
Nova Scotia				1	1	2
Poland		1	1	2		2
Portugal	2		2	2		2
Prince Edward's Island				1		1
Sandwich Islands				1		1
Sardinia	1		1			
Scotland	8	1	9	3	3	6
Siberia				1		1
South Africa	1		1			
South America				1		1
Spain	1		1	2		2
Sweden	3	1	4	8	5	13
Switzerland	5	2	7	6	5	11
Wales	1		1	1		1
Unknown	12	2	14	10	2	12
Totals	191	51	242	213	66	279

RECAPITULATION.

NATIVITY.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
United States	137	35	172	126	58	184
Foreign countries	179	49	228	203	64	267
Unknown	12	2	14	10	2	12
Totals	328	86	414	339	124	463

TABLE C.

Age when Insanity First Appeared.

Ages.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 10 years.....	3	.....	3	1	.....	1
Between 10 and 15 years.....	6	2	8	4	1	5
Between 15 and 20 years.....	13	4	17	6	6	12
Between 20 and 25 years.....	30	6	42	40	26	72
Between 25 and 30 years.....	50	12	62	51	12	63
Between 30 and 35 years.....	41	10	51	41	14	55
Between 35 and 40 years.....	34	14	48	54	13	67
Between 40 and 45 years.....	32	12	44	35	18	53
Between 45 and 50 years.....	41	6	47	21	11	32
Between 50 and 55 years.....	14	7	21	22	8	30
Between 55 and 60 years.....	22	4	26	18	7	25
Between 60 and 65 years.....	16	2	18	13	2	15
Between 65 and 70 years.....	3	1	4	15	4	19
Between 70 and 75 years.....	3	2	5	4	.....	4
Between 75 and 80 years.....	3	2	5	.....	.....	.....
Unknown.....	11	2	13	8	2	10
Totals.....	328	86	414	339	124	463

TABLE D.

Age at Time of Admission.

Ages.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Between 10 and 15 years.....	5	.....	5	2	1	3
Between 15 and 20 years.....	9	4	13	3	3	6
Between 20 and 25 years.....	30	5	35	31	17	48
Between 25 and 30 years.....	43	7	50	45	18	63
Between 30 and 35 years.....	46	14	60	50	12	62
Between 35 and 40 years.....	34	11	45	54	13	67
Between 40 and 45 years.....	30	14	44	34	17	51
Between 45 and 50 years.....	30	10	40	28	10	44
Between 50 and 55 years.....	27	9	36	25	9	34
Between 55 and 60 years.....	24	5	29	18	8	26
Between 60 and 65 years.....	18	3	21	17	3	20
Between 65 and 70 years.....	7	1	8	14	1	15
Between 70 and 75 years.....	4	1	5	9	4	13
Between 75 and 80 years.....	3	1	4	1	.....	1
Between 80 and 85 years.....	1	2	3	.....	.....	.....
Unknown.....	11	2	13	8	2	10
Totals.....	328	86	414	339	124	463

TABLE E.

Cause of Insanity, as stated in Commitments.

CAUSE.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Intemperance	35	5	40	32	7	39
Hereditv	20	6	26	20	16	36
Epilepsy	8	4	12	10	4	14
Masturbation	53	1	54	39		39
Religion	8	5	13	10	3	13
Family troubles	5	2	7	3	4	7
Business and money troubles	13	1	14	8		8
Injury to head	8	2	10	16	2	18
Cerebral disease	4	2	6	8		8
Meningitis	3		3	4	1	5
Opium or morphine habit	5		5	4	1	5
Senility	5	2	7	3		3
Irregular life and exposure	10		10	2		2
Loss of work; want of work; poverty	2		2	3		3
Despondency; homesickness	2	1	3	3		5
Sunstroke; overhear	3		3	12	2	14
Overwork				4	1	5
Love affairs	4		4	3	2	5
Sexual excesses	2		2			
Nervous debility	2		2			
Remorse after homicide or crime	3		3			
Menstrual derangement		3	3			
Puerperal state		1	1		8	8
Change of life		5	5		11	11
Uterine troubles		2	2		4	4
Syphilis	2	1	3	5	1	6
Enteric disease	1		1			
Kidney troubles				2		2
Yellow fever					1	1
Cardiac lesion	1		1			
Spinal disease	1		1			
Malarial fever	2		2			
Consumption				1	1	2
Mental excitement	2	1	3			
Solitude	1		1			
Ill health		1	1	6		6
Desertion		2	2			
Fright		1	1	1		1
Paralysis				2		2
General debility				3	2	5
Blindness and worry					1	1
Death of relative	1	2	3	1	7	8
Gunshot wound	1		1			
Spiritualism	1	1	2	1	3	4
Jealousy		2	2	1		1
Bad treatment on shipboard	1		1			
Anxiety regarding own health	1		1			
Use of tobacco	1		1			
Salvation army				1		1
Strychnine				1		1
Giant powder explosion				1		1
Reading trashy novels					1	1
Unknown	117	33	150	129	39	168
Totals	328	86	414	339	124	463

TABLE F.
Classification.

CLASS.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Acute mania.....	108	34	142	121	50	171
Chronic mania.....	54	16	70	61	24	85
Monomania.....	22	3	25	28	10	38
Melancholia.....	66	16	82	45	25	70
Dementia.....	59	15	74	64	11	75
Epilepsy.....	12	1	13	16	4	20
General paresis.....	6	1	7	4		4
Idiocy.....	1		1			
Totals.....	328	86	414	339	124	463

TABLE G.
Civil Condition.

CIVIL CONDITION.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Married.....	76	46	122	88	57	145
Single.....	210	21	231	195	38	233
Widows.....		14	14		24	24
Widowers.....	13		13	13		13
Divorced.....	3	5	8	2	2	4
Unknown.....	26		26	41	3	44
Totals.....	328	86	414	339	124	463

TABLE II.

Occupations.

OCCUPATIONS.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Actors	1		1			
Bakers	6		6	7		7
Barbers	4		4			
Bartenders	1		1			
Blacksmiths	7		7	6		6
Boilermakers	1		1	1		1
Bookkeepers	2		2	2		2
Brewers				2		2
Bricklayers	1		1	2		2
Butchers	2		2	2		2
Canvassers	1		1			
Capitalists	1		1			1
Carpenters	7		7	9		9
Carriagemakers	3		3	1		1
Cigarmakers		1	1	3		3
Clerks	4		4	11	1	12
Commercial travelers				1		1
Convicts	5		5	3		3
Cooks	4		4	9		9
Coopers	1		1	1		1
Corn doctors		1	1			
Dairymen	2		2			
Dentists	1		1			
Domestics		9	9		13	13
Dressmakers					3	3
Drivers	1		1	1		1
Druggists				2		2
Engineers	1		1	1		1
Factory girls					2	2
Farmers	24	1	25	30		30
Firemen				1		1
Fishermen				6		6
Fruit dealers				1		1
Gardeners	2		2	2		2
Grocers	1		1			
Gilders	1		1			
Harnessmakers	2		2	1		1
Hatters				1		1
Hostlers	2		2	1		1
Housekeepers		3	3		14	14
Housewives		49	49		50	50
Ironmongers	2		2			
Jewelers	2		2	3		3
Laborers	87	1	88	95	1	96
Laundresses					1	1
Laundrymen	1		1			
Lawyers	4		4	2		2
Liverystable keepers	1		1			
Longshoremen	3		3	2		2
Matrons					1	1
Mechanics	4		4	5		5
Merchants	1		1	1		1
Midwives		1	1			
Millers	1		1	2		2
Milliners					1	1
Miners	20		20	18		18
Ministers	1		1			
Molders	1		1	2		2
Painters	9		9	4		4
Paper carriers				1		1
Peddlers	2		2	1		1
Physicians	1		1	2		2
Plasterers				1		1
Carried forward	228	66	294	247	87	334

TABLE H—Continued.

OCCUPATIONS.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Brought forward.....	228	66	294	247	87	334
Plumbers and gasfitters.....	2		2			
Porters.....	1		1	1		1
Preachers.....				2		2
Printers.....	1		1	3		3
Prostitutes.....		1	1		1	1
Railroaders.....	1		1	1		1
Real estate dealers.....				1		1
Sailors.....	15		15	11		11
Saloonkeepers.....	5		5	1		1
Salvationists.....				1		1
Seamstresses.....		2	2		1	1
Sheepherders.....	9		9	7		7
Sheepshearers.....	1		1			
Shoemakers.....	7		7	2		2
Spinners.....	1		1			
Stenographers.....				1		1
Stockraisers.....	3		3	1		1
Stonecutters.....	5		5			
Storekeepers.....				1		1
Students.....	1		1	1	1	2
Tailors.....	2		2	5		5
Teachers.....				2	1	3
Teamsters.....	3		3	2		2
Tinsmiths.....	2		2	1		1
Trunkmakers.....				1		1
Waiters.....	9	1	10	2		2
Watchmen.....						
Whalers.....				1		1
Woodchoppers.....	2		2			
Woodturners.....				1		1
No occupation.....	19	15	34	10	9	19
Unknown.....	11	1	12	33	24	57
Totals.....	328	86	414	339	124	463

TABLE I.

Cause of Death.

CAUSE.	1887.			1888.		
	Males.	Females.	Total.	Males.	Females.	Total.
Paralysis.....	18	3	21	21	3	24
Apoplexy.....	4	3	7	5	1	6
Consumption.....	15	8	23	11	2	13
Marasmus.....	14	2	16	9	3	12
Exhaustion of acute mania.....	12	2	14	12	3	15
Exhaustion of chronic brain disease.....	8	2	10	8	3	11
Epilepsy.....	7		7	4	3	7
Effusion of brain.....	2		2		3	3
Senile decay.....	3	2	5	5	1	6
Organic brain disease.....		1	1		2	2
Heart disease.....	4		4	3		3
Pneumonia.....	4		4			
Dysentery.....	7		7	5		5
Bright's disease.....		2	2			
Congestion of lungs.....	3	1	4	4		4
Syphilis.....				3		3
Suicide.....	1	1	2	1		1
All other causes.....	2	2	4	10	5	15
Totals.....	104	29	133	101	29	130

PRODUCTS OF THE FARM, GARDEN, AND DAIRY.

ARTICLES.	1887.	1888.
	Amount.	Amount.
Beets, pounds	15,278	10,960
Tomatoes, pounds	32,769	40,729
Parsnips, turnips, and carrots, pounds	45,629	26,230
Peas and string beans, pounds	7,519	10,635
Pumpkins and squash, pounds	22,146	38,615
Egg plant and radish, pounds		949
Green corn and cucumbers, dozens	931	3,612
Celery, pounds	756	840
Cabbage, pounds	27,691	26,835
Onions, pounds	9,997	21,435
Lettuce, dozens	882	405
Peppers and okra, pounds	3,546	2,631
Watermelons and muskmelons, dozens		94
Hay and alfalfa, tons	65	80
Apples, pears, apricots, and peaches, pounds	4,499	15,424
Grapes, pounds	11,938	10,605
Pork, pounds	16,180	11,216
Beef, pounds	2,222	1,170
Milk, gallons	40,330	40,689
Eggs, dozens	369	382
Chickens, number used	68	30

LIVE STOCK SOLD.

STOCK.	1887.		1888.	
	Number Sold.	Price.	Number Sold.	Price.
Hogs and pigs	140	\$1,017 94	156	\$1,291 08
Calves	54	237 45	28	266 50
Cows			5	200 00
Bulls	1	35 00	1	30 00
Horse	1	50 00		
Totals		\$1,340 39		\$1,787 58

LIVE STOCK ON HAND.

LIVE STOCK.	1887.	1888.
	Number.	Number.
Hogs	303	233
Milch cows	60	55
Yearlings	5	
Young calves	5	23
Bulls	2	1

ACCOUNT OF ARTICLES CONSUMED AND ANNUAL EXPENDITURES AT THE ASYLUM.

ARTICLES.	1887.	1888.
	Value.	Value.
Flour	\$9,739 70	\$10,255 00
Meat	17,902 76	21,741 09
Sugar	3,118 51	3,087 91
Tea	1,322 11	1,094 76
Syrup	981 89	1,451 96
Potatoes	3,306 86	3,573 01
Butter	8,632 39	10,358 80
Coffee	2,411 19	3,356 05
Fish	1,276 12	1,220 21
Eggs	476 71	500 42
Beans and peas	687 87	875 19
Rice and cracked wheat	1,182 64	1,356 93
Corn meal	510 85	459 99
Fruit	789 84	642 19
Vegetables	474 18	372 39
Salt	111 57	130 69
Vinegar	133 61	99 03
Small groceries	1,459 93	1,174 29
Soap, starch, and potash	1,141 55	1,259 07
Drugs and medicines	1,286 58	1,347 80
Liquors	456 25	659 90
Tobacco	1,234 89	1,328 48
Dry goods	1,671 75	2,190 76
Clothing and hats	7,610 43	7,155 93
Shoes and leather	3,103 86	2,863 44
Blankets	2,098 54	2,196 10
Furniture and crockeryware	2,366 38	1,714 76
Hardware and tinware	1,712 14	1,272 22
Bedding	1,290 33	1,595 44
Brooms and brushes	450 21	369 67
Hay, grain, and feed	2,750 07	1,980 78
Garden seeds and tools	285 08	310 08
Lumber	3,357 27	1,710 60
Repairs and improvements	4,890 32	2,114 80
Paints, oils, and glass	1,338 53	498 97
Books and stationery	543 53	688 93
Gas and oil	2,258 33	2,411 76
Fuel	14,242 10	17,043 56
Castings, pipes, and iron	4,353 09	2,083 22
Advertising for supplies	350 00	310 00
Services of Directors and Secretary	1,862 40	1,838 40
Discharged patients	541 55	547 20
Returned escapes	163 87	354 30
Payroll and wages	92,669 48	93,486 13
Miscellaneous	1,277 63	936 64
Totals	\$209,824 89	\$212,048 85

COST OF THE DIFFERENT DEPARTMENTS.

DEPARTMENTS.	1887.	1888.
	Cost.	Cost.
Male kitchen and dining-room	\$34,340 32	\$40,349 46
Male department	63,741 14	64,926 85
Female kitchen and dining-room	16,625 36	17,984 51
Female department	33,074 99	35,293 26
Bakery	10,893 11	11,388 39
Engine-houses and laundries	9,945 80	7,830 59
Farm, garden, and dairy	8,051 91	7,265 44
Repairs and improvements	9,585 82	4,324 42
General mechanics' shop	1,032 56	778 42
Drug store	1,815 81	2,074 75
Office	505 80	642 09
Advertising for supplies	350 00	310 00
Services of Directors and Secretary	1,862 40	1,838 40
Medical Superintendent	5,272 44	4,939 32
Assistant Physician	4,300 00	4,300 00
Assistant Physician	4,300 00	4,300 00
Miscellaneous	3,597 43	3,502 95
Totals	\$209,824 89	\$212,048 85

AVERAGES.

MONTHS.	Average No. of Patients on Hand Daily.	Average Daily Expenses.	Average Cost per Capita per Day (cents).	Average Cost per Capita per Month.
1886—July	1,488	\$528 86	35.5	\$11 02
August	1,481	544 16	36.7	11 39
September	1,491	609 98	40.0	12 27
October	1,494	637 31	42.6	13 22
November	1,501	656 79	43.7	13 12
December	1,510	629 38	39.5	12 26
1887—January	1,509	586 65	38.8	12 05
February	1,525	577 37	37.8	10 60
March	1,524	535 34	34.9	10 82
April	1,518	535 71	35.0	10 52
May	1,528	521 21	33.9	10 51
June	1,542	537 08	34.8	10 45
Yearly average for 1886—1887	1,509	\$574 86	38.0	\$11 59
1887—July	1,550	\$539 87	34.8	\$10 80
August	1,543	526 61	34.1	10 58
September	1,553	560 51	36.1	10 82
October	1,552	589 76	38.0	11 78
November	1,546	601 54	38.9	11 67
December	1,555	640 56	41.2	12 77
1888—January	1,555	623 11	40.0	12 42
February	1,568	592 28	37.7	10 95
March	1,576	612 10	38.8	12 04
April	1,591	566 54	35.6	10 68
May	1,618	539 43	33.3	10 33
June	1,639	559 98	34.1	10 25
Yearly average for 1887—1888	1,571	\$579 36	36.9	\$11 25

The following table shows the movement of patients in the asylum from its foundation to July 1, 1888:

GENERAL STATISTICS.

Number of Admissions, Recoveries, Deaths, etc.

YEAR.	Admissions.	Recoveries.	Discharged & Treated.	Deaths.	Escaped.	Number Resident at the Close of each Year.	Increase.	Decrease.	Whole Number Treated.	Per Cent of Recoveries to Admissions.	Per Cent of Deaths on the Number Treated.
1851	13	6		1		6	6		13	46.15	7.69
1852	124	50	6	10		62	56		130	40.32	7.69
1853	160	108	8	12		103	41		222	67.50	5.40
1854	202	150	13	21		134	31		305	74.00	6.89
1855	214	168	16	18		162	28		348	78.50	5.20
1856	210	126	15	23		172	10		382	60.00	6.02
1857	206	81	17	28		188	16		378	39.32	7.33
1858	244	112	20	32		273	85		432	45.90	7.41
1859	276	112	22	49		370	97		549	40.58	8.91
1860	248	123	21	54	10	417	47		618	49.59	8.73
1861	198	154	34	33	14	416		1	615	77.77	5.36
1862	301	127	14	65	12	499	83		717	42.19	9.06
1863	252	105	17	47	12	583	84		751	41.67	6.26
1864	219	101	25	82	12	581		2	802	46.12	10.22
1865	268	93	15	82	27	632	51		849	34.70	9.66
1866	279	131	13	62	12	693	61		911	46.95	6.81
1867	313	125	14	89	9	769	76		1,006	40.00	8.80
1868	387	146	13	134	10	853	84		1,156	37.73	11.59
1869	482	225	16	159	15	920	67		1,335	46.68	11.91
1870	562	221	36	156	22	1,047	127		1,482	39.32	10.55
1871	523	245	36	176	23	1,090	43		1,570	46.84	11.21
1872	506	240	33	188	12	1,123	33		1,596	47.43	11.78
1873	401	185	19	152	12	1,156	33		1,524	46.13	9.97
1874	524	209	46	178	23	1,224	68		1,680	39.88	10.59
1875	615	259	71	181	26	1,302	78		1,839	41.95	9.84
1876	414	252	60	172	18	1,214		88	1,716	61.26	10.03
1877	201	83	30	100	7	1,195		19	1,415	41.29	7.06
1878	219	80	19	106	7	1,202		7	1,414	36.53	7.49
1879	106	58	16	100	7	1,127		75	1,308	54.71	7.64
1880	114	40	9	72	4	1,116		11	1,241	35.08	5.80
1881	149	54	16	92	1	1,102		14	1,265	36.24	7.19
1882	179	71	11	93	11	1,095		7	1,281	39.67	7.27
1883	258	68	10	86	5	1,184	89		1,353	26.35	6.35
1884	264	113	22	87	11	1,215	31		1,448	42.80	6.01
1885	341	60	19	87	11	1,379	164		1,556	17.60	5.59
1886	504	201	45	135	16	1,486	107		1,883	39.86	7.17
1887	447	179	27	133	8	1,553	67		1,900	43.23	7.00
1888	463	214	19	130	7	1,646	93		2,016	46.22	6.00
Totals	11,353	5,075	843	3,425	364		1,863	217			

ARCHITECTS' REPORT OF IMPROVEMENTS REQUIRED.

SAN FRANCISCO, September 26, 1888.

To the honorable Board of Directors of the State Insane Asylum, Stockton:

GENTLEMEN: In accordance with the request of your honorable Board, received through Dr. Mays, Superintendent of the Insane Asylum at Stockton, we have visited the institution and examined the various buildings, with the view of reporting to your honorable Board the probable cost of the various repairs and improvements necessary for the protection of the buildings and more economical and convenient management.

As is well known, many of the buildings at the Stockton Asylum were planned for a much smaller institution than it has now grown to be, also in carrying out the very economical ideas of the managers in years past many desirable works have not been executed, but which force themselves on your attention as very necessary.

As some of the buildings are more than thirty years old, and built at first with inferior materials, they now need quite extensive repairs. We therefore submit the following report of the most necessary works:

BOILER HOUSE AND ENGINE ROOM.

When the boiler house, pumps, and engine room for the male department were established in their present location they were designed for no other purpose than to furnish the old male department buildings with water, and the laundry with water and power, and were quite sufficient for that purpose. Since then, however, the new buildings for the male department have been erected with greater capacity than the old, and these buildings are heated in the winter seasons by steam from the main boilers. This supply of steam, together with the increased demand for water, is beyond the capacity of the boilers to supply.

The two boilers are driven to their full capacity to keep up a moderate but inadequate supply of steam, and necessary repairs to either of the boilers cannot be made without depriving some parts of the institution of water and heat. These boilers have been in use a long time and are about worn out.

The boiler room is not large enough to admit additional boilers, it has no brick chimney, and is not conveniently located for economically supplying the entire group of buildings constituting the male department. We would therefore recommend an entirely new boiler house and engine room, directly in the rear of, and on the center line of the new buildings. This boiler house should be of fire-proof materials throughout, with four boilers 48 inches by 16 feet, or their equivalent in some other style of boiler, and a brick chimney at least one hundred feet high.

Two new boilers should be furnished for this boiler house, and the old ones thoroughly repaired and set. Also the pumps and engine should be overhauled and reset in the new engine room.

New wells should be sunk, and the water allowed to flow into a sunken reservoir, to allow the sand to settle before entering the pump pipes.

A tank with a capacity of about forty thousand gallons should be elevated near the boiler house, to the level of the distributing tanks in the buildings, thus giving a uniform supply to all parts of the building and relieving the pumps of the friction caused by long lines of pipes.

WORKSHOPS.

On either side of the boiler house should be the workshops, the need of which is apparent. These may be built two stories high, and, like all other buildings on the grounds, should be of brick.

Light occupations should be carried on in the second story, while the ones requiring heavier materials may occupy the first story. The departments requiring power should be next to the engine room, from which shafting could extend as far as required.

The general dimensions, together with an approximate estimate of cost of these buildings and other improvements, will be found in the general summary of this report.

GENERAL DINING-ROOM, FEMALE DEPARTMENT.

As the associated dining-room, provided for the male department three years ago, has proven such a success, it is desired to erect a similar one at the female department. This should be erected in the south rear court, about fifteen feet from the kitchen, with a platform between the kitchen and dining-room, level with the floors, and a roof over the gangways.

This dining-room building should be two stories high, as the second story is needed for a mending and sewing-room. Stairs and covered ways should also be provided, to allow the inmates of the entire south wing to reach the general dining-room.

KITCHEN, MALE DEPARTMENT.

It is desired to erect a new kitchen for the male department, as the heat and fumes from the present kitchen are very objectionable to the wards over it, and the space now occupied by the kitchen is needed for general offices.

It will be remembered that the new buildings were not intended to accommodate the officers of the entire institution, and were therefore not designed on a sufficiently liberal scale. By appropriating the space now used for kitchen, very great improvements may be made. The new kitchen should be immediately in the rear of the present one, and but one story high.

HOUSES FOR OFFICERS.

As the officers' quarters in the old male department buildings have been given up to patients, the need of houses for the Assistant Physicians and Supervisor is made more apparent. They are required to live on the grounds, but suitable quarters have never been established. We include in our estimate two brick houses of eight rooms each, and one of seven rooms.

MORGUE.

A morgue is also necessary, and requires but a small brick building of three apartments, with cement floor.

No other new buildings are required, unless it be semi-detached lavato-

ries for the female department. The plumbing work of that department is by no means up to the modern standard. The fixtures are inferior and dilapidated, some are not properly trapped, and many are not ventilated. While new fixtures, with safe traps and ventilation to soil and waste pipes, could be put in at a cost of about \$3,000, it would be much better to build semi-detached lavatories in the rear court, with convenient passages to the various wards. Our estimates are for two such buildings, entirely of brick, with cement floors.

Should these lavatories and the associated dining-room be constructed as suggested, the old ward dining-rooms and lavatories would furnish room and accommodations for about fifty more inmates, or permit those now in the attic to be removed to better quarters.

At the female department, considerable work is required to put it in good working order. As more laundry room is required, it would be advisable to give up the ironing room for a sorting and drying room, and erect a building near the drying yard for ironing.

The general ventilation of the female department should receive attention. All the ventilating flues stop at the level of the attic floor, discharging the foul air directly into the open attic, from which it is expected to find its way into the open air. A large portion of the attic is now occupied by patients, and it is decidedly objectionable to keep them in an atmosphere supplied from the wards below. We have estimated the cost of taking all these flues by means of galvanized iron pipes and ducts to proper ventilating shafts, also to place large ventilators over the assembly hall.

GUTTERS.

The roof gutters on this entire building are formed of zinc, which breaks frequently from expansion and contraction, and have cost about \$150 each year for repairs. Our estimate is for replacing them with lead.

CEMENTING.

The next item in our estimate is for cementing the central building and south wings of this department, as the old mastic originally applied has entirely peeled off.

TIN ROOF.

The tin roof on the north wing, and central portion of the old male department, having been on about thirty years, and repaired many times, should be entirely replaced with a new tin roof, and the battlements repaired.

AIRING COURT.

It is quite desirable to enlarge the yard or airing court in connection with the north wing of the old male department, and to construct two lavatories with proper plumbing, for which you will see our estimate.

CEMENT FLOOR.

We would also call your attention to the fact that cement floors have not been laid in the wings of the new male department. The appropriations being barely sufficient to erect and finish the buildings, the cement floors were not considered absolutely necessary. We would, however, urge the importance of having a basement floor that will prevent dampness

and exhalations from arising. This is especially important, as the supply of air to heat and ventilate the building passes into the basement before entering the flues and ducts, for which reason the basement should be made as clean and wholesome as possible.

Considerable painting of roofs and woodwork about the various buildings is also necessary for their preservation.

We would say in regard to the following estimates that while they are intended to be approximate only (no plans or specifications having been made) they have been carefully made, and are sufficient to perform the various works in substantially the same manner as the buildings built at the asylum under our directions during the past eight years.

DETAILED ESTIMATE OF THE WORK ABOVE RECOMMENDED.

Boiler house and engine room, 40 by 60 feet.....	\$6,000 00
Boilers and setting, machinery, wells, and tanks.....	6,500 00
Workshops, 30 by 75 feet, two stories.....	4,500 00
Ironing rooms, female department, 25 by 60 feet.....	2,000 00
Associated dining-rooms, 40 by 75 feet, two stories.....	7,500 00
Kitchen, male department, 40 by 40 feet, and change of office.....	5,000 00
Two residences for Assistant Physicians, eight rooms.....	14,000 00
Residence for Supervisor, seven rooms.....	6,000 00
Morgue, 25 by 40 feet.....	1,500 00
Two semi-detached lavatories for female department, each 25 by 25 feet, three stories high.....	8,500 00
New plumbing complete, female department.....	4,000 00
Ventilating pipes and shafts.....	2,000 00
Cementing, female department.....	2,500 00
New gutters to roof.....	1,000 00
New tin roof and repairs, male department.....	1,250 00
New yard wall, 250 feet long, and two lavatories.....	1,500 00
Plumbing for the same and drains.....	500 00
Cement floor in basement, 30,000 square feet.....	4,000 00
Painting roof and exposed parts.....	2,000 00
Total	\$80,250 00

All of which is most respectfully submitted.

PERCY & HAMILTON,
Architects.

BIENNIAL REPORT OF THE TRUSTEES

OF THE

CALIFORNIA HOSPITAL FOR THE CHRONIC INSANE,

At Agnew, Santa Clara County, California.

1888.



SACRAMENTO:

STATE OFFICE, : : : : J. D. YOUNG, SUPT. STATE PRINTING.

1888.

OFFICERS OF THE HOSPITAL.

BOARD OF TRUSTEES:

E. F. DELGER, Chairman	Oakland.
DR. J. W. GALLY	Watsonville.
C. H. MADDIX	San José.
A. McDONALD	San José.
W. D. TISDALE	San José.

SECRETARY AND TREASURER:

L. G. NESMITH	San José.
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RESIDENT OFFICERS:

W. W. MACFARLANE, M.D.	Medical Superintendent.
W. F. PRATT, M.D.	Assistant Physician.
EMILY McB. YEARGAIN, M.D.	Assistant Physician.
E. R. BAILEY	Medical Superintendent's Secretary.
F. C. YOUNG	Steward.
MRS. A. W. CHAMPLIN	Matron.
L. M. NAGEL	Steward's Clerk.
T. D. ARMSTRONG	Supervisor.
MRS. T. D. ARMSTRONG	Supervisoress.

REPORT.

To his Excellency R. W. WATERMAN, Governor of the State of California:

The Board of Trustees of the California Hospital for the Chronic Insane herewith respectfully submit to you, in pursuance of law, their biennial report, covering the two fiscal years ending June 30, 1888, which will show you the financial and general condition of the institution. We also make such suggestions and recommendations as we believe will be conducive to the rapid and successful completion of an institution which is to prove such a much needed relief to the overflowing asylums at both Napa and Stockton, and which we believe will also materially assist in the better and more convenient government of our at present but partially completed institution.

We will begin our report where the former Board of Trustees, reporting to his Excellency Governor George Stoneman, left off, and now report to you the completion of ward building number one, the kitchen building, the boiler and engine house, the tunnel connecting the two aforesaid buildings, the smokestack, the bakery and laundry building, the erection of a five hundred-light gasoline machine, a cement-lined brick reservoir, capacity one hundred thousand gallons, and a temporary system of sewerage. In addition to the buildings, etc., which have been completed, we would report to you that we have caused to be constructed and they now are nearing completion, two additional ward buildings capable of accommodating three hundred and fifty patients, and that we are at present erecting a carpenter shop and morgue. Also, that we have placed in the boiler and engine room, one thirty-horse power Corliss engine, two one hundred-horse power Heine boilers and three powerful Hooker pumps; and in conjunction therewith have supplied ward building number one with excellent heating facilities.

We would further report that we have supplied the laundry building with a complete set of laundry machinery of the latest and most approved patterns. Ward building number one, also the upper floor of kitchen building, have been furnished with the necessary furniture, and at present writing are accommodating about two hundred patients, with the expectation of accommodating at least two hundred more within a very short space of time, or as soon as they can be transported from the different institutions at Napa and Stockton. Right here, it may be proper for us to explain the cause of the unavoidable delay in opening our institution, and our inability to redeem the promise made in the last biennial report, that the asylum at Agnew would be ready for furnishing in March, 1887.

Your Excellency, being thoroughly familiar with the facts in the case, will fully appreciate the difficulties under which the Trustees have labored in their endeavors to open the hospital with expedition. Still, a short sketch of these facts may not be out of place in this report. In the first place, according to the ruling of the State authorities, absolutely nothing could be done toward even preparing for the expenditure of funds from any of the appropriations until after the first of July, 1887, and in this manner much valuable time was lost. When the thirty-ninth fiscal year began, the illness and death of the late Governor Bartlett, who was also the Chairman of the State Board of Examiners, and the disinclination of that body to act in the absence of a full Board, still further seriously delayed the work so that the late autumn found matters exactly as they were in the early spring. This condition of affairs, which was alike irritating to both the State authorities and the Trustees, had unfortunately brought matters to a complete standstill. It was not until early in the present year, after a thorough examination of the buildings and general affairs of the hospital had been made, and by your Excellency pronounced satisfactory, that the newly appointed members, together with those whose terms had not expired, were able to take up the work, and with the appreciated coöperation and assistance of your Excellency, and the State Board of Examiners, pushed the work to a rapid and successful completion.

In this connection we desire to call your attention to the ruling of the Attorney-General, which has necessitated the charging to appropriation for additional buildings of expenditure for sewers, boilers, engines, heating apparatus, laundry machinery, sinking of wells, and many other items, which, in the judgment of this Board, was never so contemplated, nor, do we think, so intended by the Legislature. This result we consider unfortunate, as many necessary building operations have been restricted owing to the above referred to unexpected demands on the appropriation for buildings, while a great deal of the appropriation for the support of hospital, which the Trustees thought would be available for equipments, will thus remain unexpended. It is the opinion of this Board that it will be necessary to immediately secure the necessary appropriations to erect an administration building, one more ward building, gas works, also to construct a permanent sewer, for all of which, together with other necessary appropriations, not less than \$350,000 will be required. At the present writing the medical staff, and other officers of the hospital, with the exception of the Medical Superintendent, who occupies a separate dwelling house, a considerable distance from the asylum buildings, are temporarily accommodated in the kitchen building. The administration building, heretofore mentioned, which is intended to provide both living and business accommodations for the medical staff and other officers, is deemed a positive necessity. It is unnecessary for us to expatiate on the pressing need of additional ward buildings, as the one already completed and the two now in process of construction will be wholly inadequate to the relief of the Napa and Stockton Asylums.

The unexpected demands made upon the last appropriations for additional buildings rendered it impossible for the Trustees to erect regular gas works or construct a permanent sewer. As a make-shift

for temporary relief, the Trustees have constructed a gasoline gas machine, but they are convinced that this mode of lighting will not meet the requirements of the institution, and earnestly advise that sufficient funds be appropriated to enable the building of works for the manufacture of regular coal, or fixed, gas. The temporary sewerage system referred to, empties into a creek some little distance from the asylum buildings. This is strenuously objected to by the residents in that vicinity, and, in the judgment of this Board, a permanent sewer should be constructed from the hospital buildings to the tide-water of the bay, some four miles distant. In the last report the Trustees asked for an appropriation of \$15,000, for the improvement of grounds, but only one third of that amount was appropriated. This sum proved hardly sufficient for properly graveling the driveways and walks required to make the buildings accessible in wet weather, as the nature of the ground, a black adobe, makes such action absolutely necessary. The Board has been unable to do anything whatever toward adorning the grounds or the building of fences; and this is to be regretted, for much should be done, as well for the poor unfortunates who are compelled to seek refuge here as for the general credit of the State, which owns such handsome buildings, and we earnestly hope that the next Legislature will appropriate at least \$20,000 for this purpose.

Appended to this report, we most respectfully refer you to a detail statement of estimates of appropriations necessary to properly carry out the work so auspiciously begun, and we trust that your Excellency will call especial attention to the same in your message to the next Legislature, thereby greatly assisting in giving to the State that which is so urgently required.

We now wish to call your especial attention to a matter worthy of serious consideration, and a matter which, as we understand it, meets with the hearty sympathies of the Trustees and officers of both the Napa and Stockton Asylums; and that is, that our institution at Agnew be placed upon a par, or in the same category, as the other asylums of the State—that is to say, to strike out the word “chronic.” A few reasons for such action being that the majority of those who are unfortunate enough to have relatives that it is necessary to confine in an insane asylum, seriously object to have them sent to an institution where their confinement therein virtually implies imprisonment for life; another, among many reasons, being that it adds a great deal to the expense of transportation, letting alone the danger of such transportation, to be compelled to take all insane commitments for the portion of the State in which this institution is located up to the other asylums, to be there recommitted to Agnew.

Before closing this report, we wish to direct your attention to certain claims, aggregating to the sum of \$2,042 25, which have been duly allowed by the Board of Trustees, but rejected by the State Board of Examiners for technical reasons, *i. e.*, that while the claims were not allowed by the Trustees until after July 1, 1887, the beginning of the thirty-ninth fiscal year, and the supplies were for that year, yet, as they were ordered and furnished prior to July first, the indebtedness could not be charged to an appropriation which the Legislature had not made available until said date aforesaid. At the time these goods were ordered, and the indebtedness above referred

to was incurred, it was deemed by the Trustees that they were doing that which would prove for the best interests of the State, and which was deemed an imperative necessity; and we would recommend to your Excellency that these claims, which are perfectly correct and just, be allowed by the State Board of Examiners, in order that the claimants may be able to appear before the next Legislature and obtain the much to be desired relief.

All of which is respectfully submitted.

E. F. DELGER,
Chairman.
C. H. MADDOX,
W. D. TISDALE,
A. McDONALD,
J. W. GALLY,
Trustees.

STATEMENT OF ESTIMATES.

Administration building	\$125,000 00
Additional ward building.....	80,000 00
Connecting corridor	1,000 00
Heating for three ward buildings	25,000 00
Additional stone floors and car tracks	6,000 00
Gas works	20,000 00
Improvement of grounds	20,000 00
Main sewer	25,000 00
Furnishing for administration building (same as allowed for Napa Asylum)	10,000 00
Furnishing for three ward buildings.....	20,000 00
Purchase of live stock	3,000 00
Architect's fees	12,000 00
Superintendent of construction	5,000 00
	<hr/>
	\$352,000 00

REPORT OF SECRETARY AND TREASURER.

To the honorable Board of Trustees of the California Hospital for the Chronic Insane:

GENTLEMEN: Herewith find statement of expenditures for the fiscal years ending June 30, 1888, and addenda showing expenditures and contracts awarded up to October 1, 1888. This latter I have thought best to submit to you, as the principal expenditures for the last of the two years referred to have really occurred since June 30, 1888, and a simple statement of expenditures up to that date might be misleading, inasmuch as it would not show the true condition of the various appropriations made by the last Legislature for the benefit of the institution over which you preside.

Expenditures of appropriation of 1885 for thirty-seventh and thirty-eighth fiscal years: Amount of appropriation, \$250,000.

Expenditures up to November 30, 1886 (see last biennial report). \$140,851 12.

Expenditures from November 30, 1886, to June 30, 1887:

Farm and Grounds.

Farming implements, including wagons, carriages, etc.....	\$3 10	
Supplies, such as wire fences, lumber, iron, furniture and fixtures, kitchen utensils, etc.	53 90	
Expense, insurance, and sundry expenses.....	53 75	
Supplies proper, provisions, fuel, and provender.....	75 74	
Payroll of farm	520 00	
		\$706 49

Expenses of Administration.

Traveling expenses and per diem of Trustees, salary of Secretary, furnishing and rent of office, stationery, etc.....	1,814 74
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Building Expense.

Pay of architect and Superintendent of construction, etc.	3,734 65
Contract for buildings.....	47,693 00
	\$194,800 00

Expended by Commissioners, prior to appointment of Board of Trustees, as reported by the honorable Controller of State:

Purchase of land	\$55,000 00	
Attorney's fees	200 00	
		55,200 00
		\$250,000 00

Appropriations of 1887.

Additional buildings, thirty-ninth and fortieth fiscal years	\$250,000 00
Support of hospital, thirty-ninth and fortieth fiscal years	134,000 00
Furnishing, thirty-ninth or fortieth fiscal year	16,000 00
Purchase of live stock, thirty-ninth or fortieth fiscal year	1,500 00
Improvement of grounds, thirty-ninth and fortieth fiscal years	5,000 00

Expenditures from July 1, 1887, to June 30, 1888:

Hospital and Farm.

Supplies proper, provisions, fuel, and provender.....	\$2,507 29	
Farm expense, insurance, and sundry expenses.....	415 49	
Supplies, such as wire fences, lumber, iron, kitchen utensils, etc.....	2,367 30	
Payroll of farm (pay of farm hands)	3,291 00	
Hospital salary account (pay of officers and employes of Hospital).....	5,562 06	
Hospital expense, insurance on buildings, advertising, and sundry expenses	3,734 02	
Farming implements, including wagons, carriages, etc., for farm and hospital	289 15	
		\$18,166 31

Expenses of Administration.

Traveling expenses and per diem of Trustees, salary of Secretary and Treasurer, rent of office, stationery, etc.....	2,713 04	
Total support of Hospital.....		\$20,879 35
Improvement of grounds		2,500 00
Purchase of live stock.....		600 00
Furnishing.....		2,021 90

Additional Buildings.

Building expense, pay of architect and Superintendent of construction, surveying, advertising, etc.....	\$9,963 97	
Contract for machinery	8,166 00	
Contract for ward buildings, Nos. 3 and 4, and connecting corridors.....	51,353 80	
Other buildings	9,645 57	
		79,129 34
Total		\$105,130 59

Addenda, showing expenditures from July 1, 1887, to September 12, 1888:

Support of Hospital and Farm.

Supplies proper	\$2,992 61	
Farm expense	596 61	
Supplies.....	2,680 08	
Pay roll of farm.....	3,668 42	
Hospital expense.....	3,761 67	
Hospital salary account.....	6,828 13	
Farming implements.....	389 15	
		\$20,916 67
Expenses of administration.....		3,031 84
Total support of hospital.....		\$23,948 51
Furnishing		2,394 40
Improvement of grounds		2,500 00
Purchase of live stock		1,188 00

Additional Buildings.

Contract for ward buildings 3 and 4, and connecting corridors...	\$87,288 80	
Contract for machinery.....	18,166 00	
Building expense	11,508 14	
Other buildings	9,645 57	
		126,608 51
		\$156,639 42

Memorandum of contracts awarded and created liabilities against appropriations for additional buildings, furnishing, etc., given for the purpose of showing the true condition of those appropriations on September 12, 1888:

Additional Buildings.

Ward buildings, Nos. 3 and 4, and connecting corridors.....	\$170,972 00	
Completion of smokestack.....	3,365 00	
Reservoir.....	2,472 00	
Concrete floors and railroad track.....	2,750 00	
Carpenter shop and morgue.....	4,798 00	
Machinery, boilers, engines, etc.,.....	28,500 00	
Gas machine.....	3,000 00	
Laundry machinery.....	2,075 00	
Subsidiary sewers.....	723 00	
Plastering.....	100 00	
Plumbing.....	566 00	
		\$219,381 00

Furnishing.

Kitchen furniture.....	\$915 00	
Beds and bedding.....	1,830 00	
Gas fixtures.....	450 00	
		\$3,195 00
Total building contracts.....	\$219,381 00	
Add future pay of architect.....	2,761 54	
Add Superintendent of construction.....	1,800 00	
Sundry items already charged to this appropriation.....	9,645 57	
Architect's fees and salary of Superintendent of construction, etc., already charged.....	11,508 14	

Total additional buildings..... \$245,096 25

Furnishing.

Contracts awarded as above.....	\$3,195 00	
Charged already to said appropriation.....	2,394 40	
Total furnishing.....		\$5,589 40

CONTINGENT FUND.

Receipts and disbursements from July 1, 1886, to June 30, 1888:

Receipts.

Cash on hand July 1, 1886.....	\$117 35	
Pasturage.....	251 19	
Fruit and produce.....	347 96	
Hay.....	2,356 42	
Wood.....	38 00	
Miscellaneous.....	406 50	
		\$3,517 42

Disbursements.

Expenses, farm.....	\$362 90	
Expenses, office.....	279 57	
Expenditures account exhaustion of appropriation of 1885.....	2,213 90	
Cash on hand June 30, 1888.....	661 05	
		\$3,517 42

Respectfully submitted.

L. G. NESMITH,
Secretary and Treasurer.

SAN JOSÉ, September 30, 1888.

REPORT OF MEDICAL SUPERINTENDENT.

To the honorable Board of Trustees of the California Hospital for the Chronic Insane :

GENTLEMEN: The time, since the building of the California Hospital for the Chronic Insane commenced, has been uneventful, except to the Trustees and contractors, and your report will leave but little for me to say.

I made a report to the Board last January, to which I respectfully refer you.

Most of the two thousand yards of gravel ordered by the Board a year ago has been used on a graded road to the hospital buildings. A few hundred yards of gravel was left over after the road was completed, and can be used where most needed. Owing to the fact that the land on which the hospital is built is black adobe, at least two thousand yards of gravel is still absolutely indispensable to construct walks about the buildings and on the grounds in front.

I wish to call your attention to the fences on the hospital farm. Last year two hundred and twenty rods of new fence was built on the south side of the farm. The fence on the west end of the farm is fairly good. All other fences are very bad; indeed, not sufficient to turn any stock that may feel disposed to walk through. It will cost more than that the \$2,500 appropriated for the improvement of grounds, to build the necessary fences. Any California farmer of very moderate means would be ashamed of the fences we have now. When you consider that the buildings were erected in an open field, without a tree or shrub for shade or ornament, that all the walks are to be made, that the fences are dilapidated and worn out, you can readily see that now is the time for an appropriation to improve the grounds, and that \$2,500 per annum is altogether too small. In August, of last year, I was ordered by the Trustees to have a sewer constructed from the hospital to the Guadalupe River, a distance of three thousand four hundred and fifty-six feet. This sewer was constructed of the best eight-inch vitrified pipe, with the joints cemented. The fall from the hospital to the river is three and one quarter inches to the hundred feet. I presume this sewer is only a make-shift till a suitable one can be built to the bay, a distance of about three miles. No survey and estimate has been made, but the cost of a sewer large enough for the hospital when completed will approximate \$15,000.

By order of the Board I have had a bake oven built in the bakery, at a cost of \$550. This oven has been tried, and competent judges pronounce it an excellent one, and large enough to bake for eight hundred to one thousand patients.

On the hospital grounds are seven flowing artesian wells, capable of supplying more than a million gallons of water each twenty-four hours. This water can all be used for irrigating grass and vegetables. The well bored last year for supplying the hospital with water and

steam is five hundred and seventy-five feet deep, and flows about two hundred and fifty or three hundred gallons per minute. The water is pure and soft, just such as is needed for cooking, washing, and drinking purposes.

The hospital farm contains two hundred and seventy-six acres, nearly fifty in grass, three in berries, and five in pears; the balance has been in hay. The acreage of pasture land should be largely increased immediately, so that the grass may be well set by the time it is needed for an additional number of dairy cows.

In order to obtain the best results in raising fruit, vegetables, or hay, a great deal of ditching and tiling should be done as soon as practicable. Pears and berries are the only fruits on the farm. Such fruits as peaches, apricots, prunes, and grapes should be set out this winter, all of which will do well in this soil and climate. Some grading has been done around the hospital building, and much more is necessary to make the grounds attractive. Shade trees and ornamental trees should be planted in front of the building, and on the avenue, this season. All hospitals for the insane should be made as homelike and attractive as possible, and the sooner this work is commenced the better.

We are now ready to receive patients, and hope by the end of the year to partially relieve the overcrowded asylums at Napa and Stockton. We can care for one hundred and seventy-five patients from each institution, and confidently expect a liberal appropriation by the next Legislature, that we may be able to furnish them further relief.

W. W. MACFARLANE,
Superintendent.

THIRD ANNUAL REPORT

OF THE

BOARD OF TRUSTEES OF THE CALIFORNIA HOME

FOR THE

Care and Training of Feeble-Minded Children.

NOVEMBER 1, 1887.



SACRAMENTO:

STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.,
1888.

OFFICERS OF THE INSTITUTION.

BOARD OF TRUSTEES.

MRS. KATE B. LATHROP, President	San Francisco.
MRS. JULIA M. JUDAH	San Mateo.
COL. WM. HARNEY	San Francisco.
ABRAM BLOCK	Santa Clara.
JOHN WIDNEY	Santa Clara.

SECRETARY,

DR. A. E. OSBORNE.

TREASURER,

C. C. HAYWARD, Cashier Bank of Santa Clara County, Santa Clara.

RESIDENT OFFICERS AND ATTENDANTS,

A. E. OSBORNE, M.D., Ph.D., *Superintendent.*

MRS. MARGARET PAXTON OSBORNE, *Matron.*

STEPHEN H. KNAPP, *Clerk.*

MISS ANNIE L. YOUNG, *Assistant Matron.*

Teachers,

MISS MAME L. PROSEUS, MISS EMMA WILLARD PECK.

Attendants,

MISS SARAH F. GREEN,

MR. H. K. CURTIS,

MISS EMILY FOSTER,

MRS. ANN LONG,

MRS. NELLIE BIGHAM,

MRS. FANNIE COLEAN.

MISS ANNIE GILBERT, *Seamstress.*

MISS MARY BLANCHARD, *In Charge of Dining Halls.*

MISS MINNIE FREE, *Assistant.*

MR. AND MRS. WM. SHEEHAN, *In Charge of Cooking.*

CARL CARLSON, *Janitor and Watchman.*

HENRY WAGENER, *Engineer.*

B. A. ENGLAND, *Carpenter.*

GRANT BLONDIN, *Farmer.*

REPORT.

CALIFORNIA HOME FOR THE
CARE AND TRAINING OF FEEBLE-MINDED CHILDREN, }
SANTA CLARA, CAL., November 1, 1887. }

To his Excellency GOVERNOR WATERMAN, *Governor of the State of California:*

Agreeably to and in pursuance of the Act of the Legislature creating the "California Home for the Care and Training of Feeble-Minded Children," we herewith submit to you our report as Trustees of said institution.

For detailed statement in full, showing the number of inmates, their nativity, ages, and sex; the counties of the State from whence they come; the date of their admission; their general condition physically and mentally; the receipts and expenses in full; inventory of property, and all other matters necessary for your observation and consideration, we respectfully refer you to accompanying report of the Superintendent, Dr. A. E. Osborne, which has been compiled carefully and accurately under the approval of the Board of Trustees, since making our last report in November, 1886.

The capacity of the present institution is not capable (with the small addition recently added to it) of admitting more than one hundred inmates; and the appropriation already made by the Legislature is not sufficient to maintain, educate, and support any more till more suitable allowance is made for that purpose. We have at present eighty-three inmates—forty-eight males and thirty-five females—and with the addition recently made by raising the roof of a part of the main building, we can safely accommodate one hundred, which we expect to have before the end of the year. If the capacity of our institution would permit, we could double the number within a year from what we now have. It has been asserted by competent authority that there are within the State of California over five hundred idiotic or feeble-minded persons, and judging by the percentage of the number of applications we receive for admission, we have no reason to doubt the assertion.

The amelioration of the condition of idiots and feeble-minded has become a study to many humanitarians of late years. The sympathy of many friends has been enlisted in their cause. Various plans for the improvement of idiots and feeble-minded as a class have frequently been proposed and considered, but it has been generally concluded and determined that to the State belongs the training and teaching of these, her unfortunate children, and no exception it was said should be made in this case: it becomes a strictly educational project. It cannot be questioned that the prejudice existing against idiots in the community has been great, but of late years this is giving way and the humanitarian feeling towards the care and protection of these unfortunates is rapidly advancing.

In the report made to the Legislature of the commonwealth of the State of Massachusetts, by the joint committee created for that purpose, the following appropriate remarks appear: "That common observation, the official report of the various town officers, and the research of commissioners appointed for that special purpose, all concur in showing that there is a large number of persons in the commonwealth who live in a state of brutish ignorance, idleness, and degradation, and go down to the grave like the beasts that perish without a ray of religious, moral, or intellectual light, and experience has shown that when such persons are taken at a proper age, they may be trained to habits of decency, industry, and sobriety, and lifted up from the slough of mere animal existence to the platform of humanity." "And the State admits the claims of every one of its children to a share in the common blessings of education, and provides it by special enactments, and at great expense, for those who cannot be taught in common schools, such as the blind and mutes; and idiots, the most helpless and wretched of all, are most in need of skillful instruction, and that religion and humanity demand that a fair trial should be made of their capacity for improvement." "The State admits the claim of every one of its children to share in the common blessings of education."

This has ever been a fundamental principle in our Government. For other nations, the education of the deaf and blind, the infirm in intellect, may be regarded as a philanthropic provision, or as a compliment to civilization; for republics it is an imperative duty, the necessary result of the principle upon which they are founded, and by which they are sustained, the principle of justice that accords to every one, not as a privilege, but as a right, the full development of all his faculties.

Again quoting from the language of Dr. Howe, formerly Superintendent of the Massachusetts school for Feeble-minded, delivered by him at the laying of the cornerstone of the Pennsylvania Training School at Media, in 1857, he said: "Notice this great truth. Every organized being may be greatly modified by external influences in its early period of life. Human beings are especially subject to the law, and idiots are human."

"Political science teaches a second great truth. The public should provide means for institutions to every child not otherwise provided for. He who bade little children come unto Him teaches a third great truth; not alone the ten and five talents are to be multiplied, but even the one poor humble one must be cherished and increased."

In Prussia students in Normal Schools have a regular course of study in regard to methods pursued in training and educating the blind, deaf, mute, and feeble-minded. Our schools should be opened that other teachers may learn of us. No one can sit through a single school session in any one of our school rooms and observe the patience, the gentleness, the skill of the teacher, the quiet intelligence with which she perceives the first spark of intellect, the care with which she keeps it alive, and not learn much that will be of avail in teaching a healthy child.

Surely to an idiot who, to begin with, cannot walk, crams his food into his mouth with his hands and bolts it, using his teeth mainly to bite viciously any one who comes near him; who never puts on clothes or takes them off except by tearing them; who has no more cleanliness and decency in his natural habits than an animal living in the

fields, and incomparably less than a cat or dog, which respects the cleanliness of the house, to teach such an idiot to walk, to work and to play, to dig with a spade, to feed himself with a knife and fork, to dress and undress himself, to wash and behave in a cleanly and decent manner, to kiss his companion instead of biting him, to have the use of a few words which he articulates and understands, even if he should not be able to read well or write a fair copy—to teach an idiot all this requires as much of the teacher's art as to take a normal child through the rule of three.

The objects and designs of an institution, as established by our Legislature, are not of a custodial character, but to furnish the means of education to that portion of the youth of the State not provided for in any of its other educational institutions; that is to say, its object is to furnish special means of care and instruction to that portion of our youth who are deficient in mind, or have such marked peculiarities and eccentricities of intellect as to deprive them of the benefits of other educational institutions and ordinary methods of instruction. We desire to submit that the limited room, under the appropriation allowed us by the Legislature, will not permit us to take in the numerous applications received for admission. With the present requirements and capacity of the institution we cannot accommodate more than one hundred inmates, and could readily admit double that number if we could provide room and accommodation for them.

From experience and observation made by us, we should recommend a building to be erected exclusively for females of the feeble-minded class, to be known as the "California Home for Feeble-Minded Females," and to form an adjunct, or addition, to the present institution, and to be exclusively by themselves, whereby, by course of training and education, they could partly, if not altogether, be able to make themselves self-supporting by their own labor. It is needless for us to state the importance and urgent necessity of an asylum for this class of unfortunates, as it can be readily perceived how such creatures, abandoned and left by themselves to wander and go forth in the large cities and towns, become a prey to the depraved and vicious and immoral of mankind, unprotected as they are in their unfortunate, demented condition. With an asylum of this character, where they could find shelter, care, and protection, it can be reasonably concluded, by a system of training and teaching, they advance, and develope to that stage of dependency that would better fit and enable them in a very short period to go forth into the world better able to protect, care, and support themselves. Whereas, on the other hand, if left in their abandoned condition, unable, from their helpless, demented affliction, to struggle or guard themselves against the depraved and immoral of the human race, it would follow that the spread of such disease would be more numerous in the future, and, as a consequence, result in a deplorable scourge to our race and people, and a loss and detriment to the commonwealth to care and provide for such. It is by arresting the same in time, and by the mode here suggested, that will enable the State of California to be benefited in future, and its asylums for the insane and idiotic, its prisons and almshouses, to be lessened to a considerable degree.

We also respectfully suggest the erection of a suitable building for what is known as the extreme classes of idiots, cases in contra to that class known as feeble-minded—a building where such cases could be domiciled separate and apart from the feeble-minded or more ad-

vanced or developed in mental culture, would work and result to a great advantage. With the feeble-minded, they are as a rule collectively together and classified and graded as they advance in their mental culture, and we find it a great hardship at present for want of room, to be compelled to mingle the extreme cases of the idiotic with the other—as the tendency is to retard the progress of those who develop in their mental condition. And for further reason, the class of idiots, when collectively by themselves, would not require such a number of overseers or teachers to look after them by separation in different places, as they are at present, requiring as a general rule a person to oversee or guard each one, entailing considerable expense in that direction. We have numerous applications for this class of cases, but as before stated, for want of suitable buildings or room, we are unable to admit them.

We are pleased to state that the health of the inmates has been and is in good condition, and many have made wonderful and rapid developments in their mental and physical condition. This has been attested by those of the public and parents of the children who have visited the institution from time to time, as well as by your predecessors in office, Governors Stoneman and Bartlett, who have visited the institution and on inspection expressed their commendation in the progress made in the mental and physical condition of these most helpless children of our human race.

We desire to further state to your Excellency that the inspective visitation of the Board to the Home, through its committees, have been during the year vigilant and frequent. It is gratifying that we can report so uniformly a satisfactory condition of management through all the departments. Our Home officers and employes are evidently animated to do their utmost for their afflicted charge and to make the institution an honor to our State and nation. The Trustees earnestly invite the members of the Senate and Assembly, all public officers, and citizens generally, to visit the Home and satisfy themselves by personal examination of the result of this long needed charity.

So long as a single imbecile remains unprovided for within the limits of our State, so long will we as a State be open to the reproach that we have not provided for the most helpless of our wards. The destiny of a work upon which the fate of so many helpless beings depends, and which has aroused the attention and excited the admiration of the intelligent and humane throughout the world, now rests with the coming Legislature.

MRS. KATE B. LATHROP,
President.
MRS. JULIA M. JUDAH,
WILLIAM HARNEY,
A. BLOCK,
JOHN WIDNEY,
Trustees.

REPORT OF SUPERINTENDENT.

SANTA CLARA, July 1, 1887.

To the Board of Trustees of the California Home for the Care and Training of Feeble-Minded Children:

I have the honor to transmit herewith my semi-annual report as Superintendent of this institution, for the fiscal half year ending June 30, 1887. Many changes in the internal management of the institution, looking to the general improvement of the inmates in discipline and personal comforts, have been made during the half year just closed. These have necessitated radical changes in general school work and the care and training of the children, and certain alterations in, and repairs to, the buildings; from all of which, however, we have derived signal advantage, and have been permitted to extend our benefits to several additional children, who have long been waiting admission to the Home.

A number of circumstances have combined to make this period a notable one in the history of the Home, and from which I confidently believe will date most of its future success.

Not only have we to note the improvements, hereafter to be enumerated in detail, but the work itself has been advanced with a degree of enthusiasm that must be peculiarly pleasing to all our friends specially, and to all good citizens generally. There has been awakened a deeper interest on the part of the masses. There has been shown a greater sympathy on the part of the public, and a warmer feeling for our welfare from those who have heretofore been more or less skeptical and lukewarm as to the ultimate benefits of such an enterprise.

As a consequence, we have been honored by a large number of visitors, both to our public (Wednesday afternoon) exercises, and at other times during the week. Warm letters of encouragement from parents have lightened our work and blessed it; while the personal, unsolicited, and flattering testimonials from the same sources, relating to the improvement of their children in manners, appearance, and general intellectual condition, have completed a reward that has been honestly sought. Nor must I forget to mention the testimony of the children themselves, who, after spending a six weeks' vacation at their homes, were returned to us with the invariable assertion on the part of each parent, that they "like it better here with you than with us, and fretted to get back." One of our little "tots," specially petted by her parents, and quite a favorite here too, despite her tendency to violent outbreaks (more frequent formerly than now), and her disposition to destroy whatever comes within reach of her busy little hands, in her fantasy for strings and shreds, was returned by her father, who was delighted at the general improvement noticed in his child. The appearance of the Matron, however, brought its cloud to the father's heart, for, putting out her little hands, the child ran eagerly to her, and though unable to speak, showed her gladness by signs that were

just as plain and possibly more sincere than a spoken language. With her head nestling on the Matron's bosom, and her hands busily searching for pockets, the father's appeals and efforts to take her from her foster mother were in vain. As he left, the tears rolled down his cheeks and he said: "I cannot understand it, she seems to care more for you than for me, her father." Such scenes, multiplied as they have been with us, are full of meaning.

During this period just closed, the State Legislature met, and as an outcome of the feeling I have referred to, granted the Home an appropriation of \$63,100 for maintenance, and \$25,000 for improvements for the thirty-ninth and fortieth fiscal years. While this does not represent the support it should have given us in order for us to be able to care for all the children who have made demands upon us, yet it is a very generous allowance, and shows that California does not intend to be found wanting, neglectful, or stingy with her bounty, when the roll call of the States is made.

March 25, 1885, the Home became a State institution; it is therefore but two years and three months old. At this time an appropriation of \$45,000 was given us, with which to procure a site, build buildings, furnish them, and equip the institution, and to support and maintain the same for two years. No admission was made, however, until December 10, 1885, at which date the Home, as a State institution, was opened with twenty (20) inmates. I think no further argument is needed as to whether the State has derived any benefit from the Home during its brief existence, or if it considers it a worthy charity that should be maintained, than to mention the fact, that this year it granted simply for improving and enlarging the present buildings more than half its former total appropriation, while for maintenance it gave *315 per cent of its former total appropriation*. No other institution of which I am familiar, has been so fortunate as to secure so great an advancement as the past six months has witnessed here.

These signs of appreciation and encouragement from the State at large are healthful indications of that strong undercurrent of christian sympathy which reflects the highest type of citizenship and social culture, and which never sets in but to bear forward upon its strong uplifting tide that which it finds true and worthy.

This period is also made conspicuous by the inaugurating on the part of your Board of what I may call a new and wisely conservative business course in the controlling of the affairs of the institution, whereby has been laid broad, strong, and liberal the foundations for the future extension of this charity. This course is sure to place our Home in a position financially, educationally, and charitably second to none in the United States, though youngest of all like institutions. Wisely believing that California should take up the work fully on a line with the advancement of the work in the older States, and that we should avail ourselves of all their acknowledged experience in caring for these defectives, discarding all that they have found objectionable, unreliable, or disadvantageous, your Board has already forged ahead to an envious rivalry in the comparison of the work elsewhere.

To your Board belongs the credit that California to-day can show more for its expenditure of money, care, and attention upon the feeble-minded than probably any other State in the Union. I am compelled, in candor, to confess that I consider that these fortunate circumstances are very largely due to the fact that ladies have served

as Trustees, and still serve, though in a minority: that to their untiring energies and tender devotion to the well being and healthful moral, as well as mental environment, the advancement of the inmates, and consequently of the Home itself, is to be largely accredited.

ENACTMENT OF 1887.

Under date of March 9, 1887, an Act of the Legislature was approved that repealed all former laws pertaining to the establishment and management of the Home, and reestablished the same upon a more liberal basis, both as to the duties and obligations of your Board, and the privileges and benefits of those admitted. This enactment is beyond doubt the most liberal and generous of any State law for the feeble-minded in America, a matter for which all concerned are to be congratulated.

Among other things, it is the most merciful in its attitude to the class to which it applies; peculiarly free from technique and discriminations. *It stands as the first State law ever enacted, whereby imbecile or feeble-minded children, of any or all grades, may be provided for absolutely free for life.* Under its provisions, children may be admitted of any age, and retained for any length of time desired. In case of parents able to pay, remuneration is fixed at a sum mutually agreed upon, either by the Judge of the Superior Court, or, in case of life admissions, by the Board of Trustees.

This is also one of the few institutions established in the United States where the epileptic and the paralytic feeble-minded may find an asylum, and be cared for, treated, and schooled.

Pennsylvania, with an institution thirty-four years older, and which has in all other respects come to be considered a model of its class, is the only other institution where this merciful provision for the life care of the feeble-minded is made. *And it was secured by State enactment, some four or five weeks later than the date of our bill.* Under this law I am directed to submit a semi-annual report on the expiration of each half fiscal year; but owing to the fact that there has been no official report made to your Board since October 1, 1886, I have added to this considerable matter pertaining to the interval between that date and January 1, 1887. This especially refers to my tables and schedules of supplies, receipts, and expenditures.

IMPROVEMENTS.

Sewerage and Drainage.

Owing to the very imperfect system of sewerage and drainage, whereby the health and lives of our officers and inmates were endangered, steps were taken as early in the year as possible to provide a new system. In order that it should be the best, and at the same time the most economic possible, considering the situation of the Home buildings, experts in sanitary engineering and construction were called upon to thoroughly inspect the premises and devise means for our relief. In pursuance of such action, the following well known gentlemen duly inspected the institution, its premises, and its plumbing and sewerage, and made reports thereon: John Stock, San José; Messrs. Wm. Enright, Wm. F. Wilson, David Bush, of San Francisco; and Col. Geo. E. Waring, Jr., of Newport, Rhode Island, then on a professional visit to our State.

As a result of their examinations and recommendations, an entirely new system of sewerage and drainage has been laid according to the terms of a contract made with Reuben Burdett, of San José.

I believe it to be a perfect piece of work, and as good in design as the situation of the Home will permit.

Under the terms of a contract with Mr. William F. Wilson, of San Francisco, all the old plumbing has been removed from the buildings and new work of the latest improved pattern and best material substituted. This applies to the water-closets, drains, sinks, waste pipes, etc. We believe this work also to be able to successfully stand the severest examination, and that it will be found not only hygienically, but mechanically, strictly first class.

Gas Lighting.

A "Springfield" one hundred and fifty light gas machine, of latest pattern, with patent mixing regulator, has just been set up, and will in a short time be ready for use. The introduction of gas will not only afford a better light, but will prove much safer than the oil lamps heretofore in use. As a safeguard against lamp explosions and fire this improvement is of the greatest value.

Dining Hall.

The new dining hall made by taking out the partitions and throwing the former eating rooms all into one large hall, has increased our dining facilities fully a third, and added greatly to the convenience of and secured more efficient service in our culinary department.

Dormitories.

In the girls' department the dormitories have been enlarged and made airy and cheerful by the removal of several inner partitions. Room has also been provided for epileptics, where, isolated at night from the other children, under the charge of an attendant, who sleeps in the same room, they have ceased to annoy the other children by their infirmities.

Hot Water Apparatus.

Our new hot water apparatus, whereby an abundant supply of hot water is furnished the boys' building for all purposes, is working admirably. Utilizing the exhaust from the engine, with an appliance for the use of live steam as well, it affords us a constant supply of hot water at a minimum of expense. It will prove particularly valuable during the winter season.

Among the many other improvements, there needs to be mentioned here: The removal of the asylum cases from their former inadequate quarters to the large and spacious north wing of the boys' building (first floor); the fitting up of a cosy dining room for attendants and help; the arrangement of a sitting room for the girls, communicating with a room supplied with bath tubs, hot and cold water, water-closets, etc.; the erection of a fine, well constructed meat and milk house, with ice chest and cement flooring; the alteration of the laundry building, and the completion of its second story, by which we gain sleeping quarters for four people (intended for out door help); the erection of a fine lattice fence to the girl's play-ground; the

building of large coal houses and woodsheds, and the general overhauling, cleaning, painting, kalsomining, and papering to which the various rooms and halls have been treated, also call for special mention.

The acquisition of a six-horse power steam engine, for the pumping of water, and the late repairs to the tank-house and tanks needs also a passing notice.

A new social and literary feature, of considerable importance and great value to our staff of officers and attendants, is found in the establishing of a reading circle, whereby is secured to all in the Home the choicest current literature and a fair variety of weekly and daily newspapers. The only rule regulating the use of these magazines and newspapers is the notice posted upon each article, reading as follows:

"Free to all officers and attendants upon the sole condition that they will not lose, mutilate, deface, or destroy this publication, or any other book, magazine, periodical, or paper belonging to the 'Home Circle,' and that they will return the same to the librarian promptly upon the expiration of the time allowed. Having this in your possession will be taken as evidence of your acceptance of the above condition."

The following is the list constantly kept on file under the charge of the librarian. They all represent purchases, there being no donations among them except such as are donated by the officers themselves:

Scribner's Magazine (monthly).
St. Nicholas Magazine (monthly).
Harper's Magazine (monthly).
Century Magazine (monthly).
Babyhood Magazine (monthly).
Table Talk Magazine (monthly).
Literary News (monthly).
Book News (monthly).
Ladies' Home Journal (monthly).

Leslie's Illustrated (weekly).
Puck (weekly).
Life (weekly).
Public Opinion, American (weekly).
Harper's Young People (weekly).
Union Signal, Chicago (weekly).
Chronicle, San Francisco (daily and weekly).
Mercury, San José (daily).
Herald, San José (daily).

With this review of the general progress of the Home for the past six months, I now invite your attention to the following tables and schedules. They are designed to furnish in tabular form a succinct, complete, and yet condensed account, not only of financial, but vital and social, statistics relating to our work. They have been prepared with care, and are, *E. & O. E.*, as complete as it has been possible at this writing to make them.

For the convenience of reference I have divided them into two classes, viz.:

First—Statistics, *financial and accounts general.*

Second—Statistics, *vital and etiological.*

CLASS ONE—STATISTICS, FINANCIAL AND ACCOUNTS GENERAL.

Schedule A.—Receipts from State Controller on account of general State appropriation for thirty-seventh and thirty-eighth fiscal years.

**Schedule B.*—Receipts from parents and others on account of maintenance of children in Home.

Schedule C.—Receipts from all other sources.

**Schedule D.*—Balance due the Home on account of maintenance of children in Home.

Schedule E.—Superintendent's account with Lewis Gerstle, as Treasurer.

Schedule F.—Disbursements from State appropriation.

Schedule G.—Disbursements from fund from parents and others for care and training of children in Home.

Schedule H.—Unpaid indebtedness, incurred under appropriation of 1887, for improvements.

*Omitted here agreeably to Section 12, Act of Legislature, approved March 9, 1887.

Schedule I.—Cash advanced on account of claims, from January 1, 1887, to July 1, 1887, for which deficiency in State appropriation for 1885 exists.

Schedule J.—Amount of all claims against the Home from January 1, 1887, to July 1, 1887, and to meet which a deficiency in the State appropriation of 1885 exists.

Schedule K.—Recapitulation of receipts and expenditures.

Schedule L.—Present financial resources.

Schedule M.—Classification of expenditures.

Schedule N.—Actual cost of maintenance of inmates per capita per diem—comparison table.

Schedule O.—Monthly expenditures.

Schedule P.—Donations.

Schedule Q.—Inventory.

CLASS TWO—STATISTICS, VITAL AND ETIOLOGICAL.

Table 1.—Population.

Table 2.—Ages of inmates.

Table 3.—Nativity of inmates.

Table 4.—Cause of feeble-mindedness of inmates.

SCHEDULE A.

Receipts in Warrants and Coin from State Controller.

November 22, 1886—Warrants received from State Controller	\$999 88
January 3, 1887—Warrants received from State Controller	1,021 08
February 3, 1887—Coin received from State Controller	1,054 10
June 3, 1887—Warrants received from State Controller	320 89
Total	\$3,395 95

SCHEDULE C.

Receipts from all Other Sources.

Received from sale of old wagon	\$10 00
Received from sale of old junk	6 45
Received from sale of calf	5 50
Total	\$21 95

SCHEDULE E.

Superintendent's Account with Lewis Gerstle, Treasurer.

	Dr.	Cr.
October 7, 1886—To balance on hand	\$599 50	
November 5, 1886—To cash as per his receipt	231 35	
December 3, 1886—To cash as per his receipt	256 35	
January 7, 1887—To cash as per his receipt	320 10	
February 11, 1887—To cash as per his receipt	277 15	
March 3, 1887—To cash as per his receipt	219 05	
April 8, 1887—To cash as per his receipt	321 00	
November 4, 1886—By draft No. 9		\$130 97
December 3, 1886—By draft No. 11		334 20
January 7, 1887—By draft No. 12		238 05
February 14, 1887—By draft No. 13		155 85
March 8, 1887—By draft No. 14		143 63
April 11, 1887—By draft No. 15		121 05
May 5, 1887—By draft No. 16		919 80
June 15, 1887—By draft No. 17		175 00
Balance		\$2,218 55
		5 95
Totals	\$2,224 50	\$2,224 50
July 1, 1887—To balance in hands of Treasurer	\$5 95	

SCHEDULE F.

Disbursements made from State Appropriation.

November 22, 1886—Salaries, as per payroll	\$435 71
November 22, 1886—S. Foster & Co., supplies	226 31
November 22, 1886—Farmers Union, supplies	174 71
November 22, 1886—R. B. Donovan, supplies	68 64
November 22, 1886—J. B. O'Brien, supplies	27 66
November 22, 1886—W. R. Allen, supplies	22 95
November 22, 1886—G. I. Dibble, supplies	21 40
November 22, 1886—L. F. Hausler, supplies	16 00
November 22, 1886—Jos. T. Terry & Co., supplies	6 50
January 6, 1887—Salaries, as per payroll	436 66
January 6, 1887—The Farmers Union, supplies	163 34
January 6, 1887—S. Foster & Co., supplies	145 78
January 6, 1887—Holbrook, Merrill & Stetson, supplies	141 92
January 6, 1887—J. B. O'Brien, supplies	89 38
January 6, 1887—Henry Leonard, labor	26 00
January 6, 1887—Jos. T. Terry & Co., supplies	18 00
February 3, 1887—Salaries, as per payroll	560 83
February 3, 1887—Farmers Union, supplies	275 25
February 3, 1887—S. Foster & Co., supplies	153 14
February 3, 1887—R. B. Donovan, supplies	64 88
June 30, 1887—Fred. Schmidlin, supplies	120 30
June 30, 1887—L. V. Garigus, on account, supplies	100 59
June 30, 1887—Odorless Excavating Company, on account labor	100 00
	<hr/>
	\$3,395 95

SCHEDULE G.

Disbursements from Fund from Parents and others for Care and Training of Children in Home, as per Vouchers on File.

November 3, 1886—S. H. Knapp, incidental expenses	\$67 47
November 3, 1886—J. H. Johnson, laundry	42 00
November 3, 1886—J. Cereghino, vegetables	8 20
November 3, 1886—John Stock's Sons, supplies	6 80
December 4, 1886—F. F. De Rose, comforters	105 50
December 4, 1886—J. H. Johnson, laundry	58 00
December 4, 1886—S. H. Knapp, incidental expenses	55 15
December 4, 1886—Davis Bros., school supplies	63 25
December 4, 1886—O'Connor, Moffatt & Co., dry goods	14 70
December 4, 1886—R. A. Swain & Co., crockery	14 50
December 4, 1886—Payot, Upham & Co., stationery	12 00
December 4, 1886—J. Cereghino, vegetables	11 10
January 5, 1887—Goodyear Rubber Co., supplies	9 00
January 5, 1887—Henry Leonard, wages	16 00
January 5, 1887—Davis Bros., stationery	3 45
January 5, 1887—Payot, Upham & Co., stationery	19 80
January 5, 1887—Universal Bakery, bread, etc.	22 90
January 5, 1887—J. H. Johnson, laundry	42 00
January 5, 1887—S. H. Knapp, incidental expenses	47 90
January 5, 1887—J. N. Silva, cow	52 50
January 5, 1887—"Mercury" Printing Co., advertising	17 00
January 5, 1887—"Chronicle" Printing Co., advertising	14 00
February 14, 1887—S. H. Knapp, incidental expenses	52 85
February 14, 1887—J. H. Johnson, laundry	42 00
February 14, 1887—B. A. England, wages	30 00
February 14, 1887—T. P. Montgomery, map frame	6 00
February 12, 1887—J. H. Van Zandt, tools	12 00
February 12, 1887—E. T. Beach, feed	13 00
March 12, 1887—J. H. Johnson, laundry	50 00
March 12, 1887—A. E. Osborne, incidental expenses	21 73
March 12, 1887—Mary Rodergis, laundry	21 25
March 12, 1888—S. H. Knapp, incidental expenses	16 40
March 12, 1887—Universal Bakery, bread, etc.	13 30
March 12, 1887—J. Cereghino, vegetables	10 20
March 12, 1887—J. H. Crocker & Co., stationery	2 75
March 12, 1887—B. A. England, wages	8 00
April 6, 1887—J. H. Johnson, laundry	50 00
April 6, 1887—Mary Rodergis, laundry	21 25
April 6, 1887—J. B. Cereghino, vegetables	20 85
April 6, 1887—S. H. Knapp, incidental expenses	17 95
April 6, 1887—Universal Bakery, bread	11 00
July 6, 1887—A. E. Osborne, incidental expenses	52 55

\$1,176 30

SCHEDULE H.

Unpaid Indebtedness Incurred Under Appropriation of 1887 for "Improvements."

April 6, 1887—R. D. Fox.....	\$109 47	
April 6, 1887—F. P. Montgomery.....	50 00	
April 6, 1887—A. Steiger & Son.....	48 24	
April 6, 1887—B. A. England.....	22 00	
April 6, 1887—Thos. Lewellyn.....	20 00	
April 6 1887—L. V. Garrigus.....	12 00	
		\$231 71
May 4, 1887—Robert Menzel.....	\$26 50	
May 4, 1887—B. A. England.....	26 00	
May 4, 1887—Thos. Lewellyn.....	25 00	
May 4, 1887—David Bush.....	25 00	
May 4, 1887—Will & Finck.....	23 30	
		125 80
June 1, 1887—George E. Waring, Jr.....	\$100 00	
June 1, 1887—Ant. Fatjo.....	30 90	
June 1, 1887—B. A. England.....	27 00	
June 1, 1887—Thos. Lewellyn.....	25 00	
June 1, 1887—Fred. Schmidlin.....	21 88	
June 1, 1887—Geo. B. McKee & Co.....	7 40	
June 1, 1887—Will & Finck.....	1 87	
		214 05
June 30, 1887—Reuben Burdett.....	\$700 90	
June 30, 1887—J. J. McDaniels.....	268 78	
June 30, 1887—L. V. Garrigus.....	185 00	
June 30, 1887—Pacific Manufacturing Company.....	111 93	
June 30, 1887—D. Rinaldo.....	64 25	
June 30, 1887—B. A. England.....	26 00	
June 30, 1887—Thos. Lewellyn.....	10 00	
June 30, 1887—Fred Schmidlin.....	4 54	
		1,371 43
		\$1,972 99

SCHEDULE I.

Cash Advanced on Account of Claims from January 1, 1887, to July 1, 1887, for which deficiency in State appropriation of 1885 exists, vouchers for which are on file in the office of the Home.

May 5, 1887—Mary Blanchard, salary.....	\$70 00
May 5, 1887—Maud Williams, salary.....	85 00
May 6, 1887—S. H. Knapp, salary.....	285 45
May 6, 1887—Mary L. Proseus, salary.....	160 00
May 6, 1887—Emma W. Peck, salary.....	120 00
May 6, 1887—Anna L. Young, salary.....	120 00
May 6, 1887—Sarah F. Green, salary.....	25 00
May 6, 1887—Emily W. Foster, salary.....	85 00
May 6, 1887—Lizzie E. Hess, salary.....	77 50
May 6, 1887—William McGowen, salary.....	35 00
May 6, 1887—Mary McGowen, salary.....	15 00
May 10, 1887—Eliza Birdsall, salary.....	85 00
May 17, 1887—J. H. Johnson, laundry.....	12 50
June 13, 1887—Henry Leonard, salary.....	136 83
June 16, 1887—William McGowen, salary.....	88 67
June 16, 1887—Mary McGowen, salary.....	38 00
June 28, 1887—Henry Wagner, salary.....	20 00
July 2, 1887—John H. Johnson, salary.....	35 00
	\$1,493 95

On Account of Claim under State Appropriation for Improvements, Act passed in 1887.

May 6, 1887—Thos. Lewellyn, wages.....	\$80 00
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SCHEDULE J.

Amount of all Claims against the Home from January 1, 1887, to July 1, 1887, and regarding which a deficiency in the State appropriation of 1885 exists. Vouchers on file in office of Home.

January 31, 1887—Payroll		\$557 66
January 31, 1887—Tatum & Bowen	\$415 25	
January 31, 1887—S. Foster & Co.	187 81	
January 31, 1887—"Mercury" Company, San José	82 50	
January 31, 1887—R. B. Donovan	81 08	
January 31, 1887—A. W. Saxe, M.D.	79 50	
January 31, 1887—S. Oberdeener	71 30	
January 31, 1887—J. B. O'Brien	53 70	
January 31, 1887—Farmers Union	49 14	
January 31, 1887—Universal Bakery	30 15	
January 31, 1887—S. R. Thompson & Co.	18 15	
January 31, 1887—Hulet & Campbell	17 15	
January 31, 1887—R. Menzel	16 25	
January 31, 1887—J. Cereghino	14 15	
January 31, 1887—M. W. Lipe	10 92	
January 31, 1887—John Stock's Sons	6 50	
		1,133 85
February 28, 1887—Payroll		585 00
February 28, 1887—S. Foster & Co.	\$462 27	
February 28, 1887—L. V. Garrigus (balance)	154 41	
February 28, 1887—Odorless Excavating Company	84 00	
February 28, 1887—John Widney	156 75	
February 28, 1887—A. E. Osborne, M.D.	107 94	
February 28, 1887—Farmers Union	101 65	
February 28, 1887—G. A. Doren, M.D.	96 00	
February 28, 1887—J. B. O'Brien	53 50	
February 28, 1887—R. B. Donovan	94 90	
February 28, 1887—John A. Day	35 15	
February 28, 1887—John Stock's Sons	33 45	
February 28, 1887—"Mercury" Company, San José	30 50	
February 28, 1887—L. R. Thompson & Co.	20 45	
		1,430 97
March 31, 1887—Payroll		708 50
March 31, 1887—S. Foster & Co.	\$201 33	
March 31, 1887—Farmers Union	149 31	
March 31, 1887—John Sallows	111 00	
March 31, 1887—John Sallows	57 75	
March 31, 1887—R. B. Donovan	104 75	
March 31, 1887—A. E. Osborne, M.D.	103 15	
March 31, 1887—S. Oberdeener	57 00	
March 31, 1887—C. F. Bigelow	44 50	
March 31, 1887—John A. Nace	39 00	
March 31, 1887—L. R. Thompson & Co.	17 00	
		884 79
April 30, 1887—Payroll		755 00
April 30, 1887—Pacific Manufacturing Company	\$360 82	
April 30, 1887—S. Foster & Co.	182 26	
April 30, 1887—R. B. Donovan	109 55	
April 30, 1887—Farmers Union	76 39	
April 30, 1887—A. Withrow	26 75	
April 30, 1887—Mary Roderiguez	25 00	
April 30, 1887—I. N. Weir	15 00	
April 30, 1887—J. Cereghino	14 70	
April 30, 1887—J. H. Johnson	12 50	
April 30, 1887—A. L. Bancroft & Co.	10 75	
April 30, 1887—S. N. Knapp	10 00	
April 30, 1887—G. Perez & Bro.	4 95	
April 30, 1887—A. E. Osborne, M.D.	4 30	
		852 97
May 31, 1887—Payroll		715 00
May 31, 1887—S. Foster & Co.	\$167 40	
May 31, 1887—R. B. Donovan	106 10	
May 31, 1887—San José Laundry Company	75 00	
May 31, 1887—Farmers Union	66 17	
May 31, 1887—Mary Roderiguez	21 87	
May 31, 1887—S. Oberdeener	18 30	
May 31, 1887—L. R. Thompson & Co.	17 75	
May 31, 1887—Universal Bakery	11 25	
May 31, 1887—A. Withrow	5 85	
May 31, 1887—A. E. Osborne, M.D.	18 80	
		508 49

June 30, 1887—Payroll.....		\$703 97
June 30, 1887—S. Foster & Co.	\$191 07	
June 30, 1887—R. B. Donovan	184 10	
June 30, 1887—San José Laundry Company	131 25	
June 30, 1887—John Widney.....	122 60	
June 30, 1877—Farmers Union	75 13	
June 30, 1887—J. B. O'Brien	64 51	
June 30, 1887—J. Cereghino	32 45	
June 30, 1887—B. Hicks.....	31 55	
June 30, 1887—Mary Roderiguez.....	21 25	
June 30, 1887—John Sallows	17 00	
June 30, 1887—L. R. Thompson & Co.	15 25	
June 30, 1887—Neville & Co.	14 30	
June 30, 1887—John A. Nace.....	14 10	
June 30, 1887—John A. Day	13 25	
June 30, 1887—G. Perez & Bro.....	13 58	
June 30, 1887—E. H. Guppy & Son	11 20	
June 30, 1887—Universal Bakery	11 15	
June 30, 1887—"Chronicle," San Francisco	10 50	
June 30, 1887—S. Oberdeener.....	10 45	
June 30, 1887—C. Hicks & Co.....	8 25	
June 30, 1887—"Herald," San José.....	3 00	
		995 84
		<hr/> \$9,835 14

SCHEDULE K.

Recapitulation of Receipts and Expenditures.

Received from State Controller in warrants (see Schedule A).....		\$2,341 85
Received from State Controller in warrants (see Schedule A).....		1,054 10
Received from A. Gerstle, Treasurer (see Schedule E).....		2,218 55
Received from Income (see Schedules B and C)		2,174 40
Received from Secretary, (contingent fund).....		50 00
Deposited with Lewis Gerstle, Treasurer (see Schedule E).....	\$1,625 00	
Bills paid from State receipts (see Schedule F).....	3,395 95	
Bills paid from Income (see Schedule G).....	1,176 30	
Cash advanced on deficiency claims (see Schedule I).....	1,493 95	
Cash advanced on improvement claims (see Schedule I).....	80 00	
Cash in hands of Superintendent.....	67 70	
	<hr/> \$7,838 90	<hr/> \$7,838 90

SCHEDULE L.

Present Financial Resources.

Cash balance in hands of Treasurer (see Schedule E).....	\$5 75
Cash balance in hands of Superintendent (see Schedule K.).....	67 70
Cash due from State for advance made on claims (see Schedule I).....	1,573 95
	<hr/> \$1,647 60

SCHEDULE M.

Classification of Expenditures.

Salaries	\$5,470 33
Groceries, etc.	2,082 60
Meats and provisions	1,007 16
Dry goods, etc.	329 50
Shoes and repairing	44 80
Vegetables and fruits	120 85
Medicines and attendance	252 65
Fuel	437 62
Fish	18 53
Illuminating	133 04
Laundry	613 37
Kitchen ware, etc.....	16 05

Crockery, etc.	\$51 46
Furniture	399 16
Farm account.	411 75
Feed for stock	251 35
Stock (farm)	67 50
Stationery and printing	283 08
Wooden ware, etc.	51 01
Hardware	154 66
Traveling expenses	297 79
Postage and Post Office box rent.	37 85
Expressage and freight	22 95
Telegraph	5 90
Repairs	191 39
Home alterations, additions, etc.	1,366 72
Sewerage and drainage	1,058 14
Water account.	612 42
Heating and steam	159 72
Labor	383 72
Incidental expenses	47 30
	\$16,380 37

SCHEDULE N.

The cost of maintenance, excluding disbursements for improvements, furniture, traveling expenses, and such additional items as were directly incurred on account of extension of the work of the "Home" for the past eight months ending June 30, 1887, was \$11,662 75, or 44½ cents per day. Considering that this sum represents the cost of schooling, buying of school material, the salaries of teachers and attendants, and in many cases the clothing of children, besides their ordinary living expenses, it will be seen that our "Home" has been much more economically managed than may have been supposed. I have taken pains to ascertain from some few data at hand the per diem cost in other institutions, and present the following figures of comparison. I regret I cannot give last year's figures in all cases:

NAME OF INSTITUTION.	Years.	Cost per Diem.	Number of Inmates.
Indiana Asylum for Feeble-Minded Children	1883	\$0 44½	88
Illinois Asylum for Feeble-Minded Children	1879	56	363
Illinois Asylum for Feeble-Minded Children	1880	59½	
Illinois Asylum for Feeble-Minded Children	1881	54½	
Illinois Asylum for Feeble-Minded Children	1882	62	
Illinois Asylum for Feeble-Minded Children	1883	56	
Illinois Asylum for Feeble-Minded Children	1884	51	
New York State Asylum for Idiots	1883	494	405
New York State Asylum for Idiots	1884	47½	
New York State Asylum for Idiots	1885	50½	
New York State Asylum for Idiots	1886	46½	
North Dakota Hospital for Insane	1885	91	660
Alabama Insane Hospital (Tuscaloosa)	1885	39½	
Alabama Insane Hospital (Tuscaloosa)	1886	35½	
Connecticut State Reform School	1886	35½	477
Napa (California) Insane Asylum	1884	38½	1,319
Napa (California) Insane Asylum	1885	37½	1,436
San Quentin (California) State Prison	1885	36	1,234
Folsom (California) State Prison	1885	41½	603
California Home for Care and Training Feeble-Minded Children	*1887	44½	73

* Half Year.

For the following table, I am indebted to a recent number of the "*International Record of Charities and Corrections*," received since the above was written. It may be of interest as comparing the cost of maintenance here with the cost of seventy-eight additional hospitals and asylums for the insane throughout the United States. With the exception of Jackson, Miss., the figures are for 1886 fiscal year. Out of seventy-eight institutions named, it will be seen there are only nineteen having a lower per diem rate than our own institution:

INSTITUTION.	No. of Inmates.	Cost per Diem.	INSTITUTION.	No. of Inmates.	Cost per Diem.
Willard	1,835	\$0 37	Rochester	581	\$0 44.1
Indianapolis	1,542	48.9	Utica	577	83.2
Kankakee	1,471	46.3	Austin	572	46.9
Stockton	1,449	37.1	Hopkinsville	537	38.0
Norristown	1,427	55.0	Elgin	533	59.0
Napa	1,423	38.0	Mendota	523	51.7
Flatbush	1,413	31.5	Dixmont	522	60.2
Milledgeville	1,237	33.4	St. Louis	492	45.2
Washington	1,220	65.7	Mt. Pleasant	485	52.7
Middletown, Conn.	1,078	52.8	Topeka	481	59.0
Columbus	950	48.9	North Hampton	474	84.7
Jacksonville	856	48.9	Augusta	474	62.7
Morris Plains	845	78.2	Harrisburg	449	50.7
St. Peters	798	46.3	Richmond	448	38.1
Danville	798	53.9	Brattleborough	436	50.9
Kalamazoo	782	71.1	Jackson, Miss.	428	37.7
Worcester (acute)	756	50.9	Williamsburg	409	52.8
Danvers	749	54.3	Worcester (chronic) ..	400	43.0
Tuscaloosa	722	40.8	Catonsville	400	52.2
Anchorage	689	41.2	Poughkeepsie	400	73.0
Weston	685	30.9	Osawatomie	396	63.6
Long View	685	40.9	Lincoln	367	44.3
Taunton	683	50.9	Buffalo	365	81.8
Binghampton	675	39.5	Pennsylvania	364	66.1
Athens	672	46.2	Essex Co., N. J.	362	51.1
Trenton	658	64.7	Concord	322	61.5
Anna	655	46.8	Bloomington	272	1 98.7
Warren	641	49.9	Raleigh	251	51.7
Winnebago	637	47.3	Morganton	250	55.2
Pontiac	637	63.5	South Boston	236	71.7
Cleveland	635	47.3	Auburn	194	56.0
Indianapolis	633	59.7	Butler	177	1 31.7
Columbia	623	38.0	Goldsborough	171	37.8
Lexington	598	54.7	McLean	169	2 26.7
Jackson, La.	597	26.8	Carson City	160	69.4
Dayton	592	47.7	Toledo	122	42.6
Yankton	148	81.8	Friends' Asylum	104	2 17.0
Fort Steilacoom	142	48.4	Adams' Nervine	28	3 36.7
Staunton	589	43.8			

SCHEDULE O.

Monthly Expenditures.

ARTICLE.	1886, October.	1886, November.	1886, December.	1887, January.	1887, February.	1887, March.	1887, April.	1887, May.	1887, June.	Total.
Salaries.....	\$444 71	\$436 63	\$560 83	\$557 65	\$585 00	\$708 50	\$755 00	\$715 00	\$700 97	\$5,170 33
Groceries.....	172 21	163 56	348 75	233 76	318 29	218 78	188 24	186 68	232 33	2,082 60
Meats, etc.....	68 64	48 40	64 88	93 63	101 76	135 70	135 41	128 92	226 42	1,007 16
Dry goods, etc.....	27 66	111 08	9 00	48 70	54 25				78 81	329 30
Shoes.....				5 00					39 80	44 80
Vegetables.....	17 40	11 10		14 15	10 20	20 85	14 70		32 45	120 85
Medicines.....	6 15			156 20	1 55	57 00		13 15	18 30	252 65
Fuel.....	136 87			10 92	289 83				157 62	457 02
Illuminating.....	17 90	14 00	25 15	3 94	34 60	15 40	4 40	8 85	8 80	133 04
Fish.....							4 95			4 95
Laundry.....	42 00	58 00	42 00	42 00	71 25	71 25	37 50	93 87	13 38	433 37
Kitchen ware.....	5 45				6 10	3 95	55			16 05
Wooden ware.....	13 54	6 50	4 50	2 71		6 00		4 00	17 76	51 01
Crockery.....	7 59	21 05		3 31	6 80	7 80				39 15
Furniture.....	69 20	232 15	22 15	6 00	12 00	50 00	7 66			111 75
Farm account.....				22 47		348 68		23 00	17 00	411 15
Feed for stock.....	17 41	29 85	64 44	13 00	21 75	21 55	39 60	16 27	27 18	251 35
Stock (farm).....			67 50							67 50
Stationery and printing.....	75		34 45	82 50	60 63	39 00	10 75	19 80	33 80	283 08
Hardware.....	5 30	1 85	5 20	13 25	36 95	3 75		37 10	51 25	154 65
Postage and box rent.....	3 70	5 20	4 20	3 50	4 10	5 50	5 10	4 60	1 95	37 85
Express and freight.....	2 60	5 80	1 80	1 70	2 00	2 20	2 30	3 35	6 00	22 95
Telegraph.....		75	55	80	40	70	25	60	1 25	3 90
Repairs.....	7 30	21 40	1 00			91 44		41 75	28 50	191 39
Home improvements and alterations.....						351 00	353 16	32 57	629 99	1,369 72
Sewerage and drainage.....				547 50	184 00	48 24	25 00	100 00	700 90	1,638 14
Water, etc.....						12 00	26 50		26 42	642 42
Heating and steam.....		140 92				18 80				159 72
Labor.....	33 37	47 60	29 75	53 00	10 00	42 00	51 00	52 00	65 00	383 72
Expense (incidental).....	5 50	6 55	3 85	6 15	7 30	4 25	6 05	3 20	4 45	47 30
Expense (traveling).....					107 94	147 65			42 20	297 79
Totals.....	\$1,105 85	\$1,372 83	\$1,290 90	\$1,924 85	\$1,926 70	\$2,431 99	\$1,668 12	\$1,188 61	\$3,180 52	\$16,380 37

The increase in certain months over others was caused by expenditures on buildings, etc., as authorized by special Act of Legislature, and separate appropriation. The actual cost of maintenance remained the same.

SCHEDULE P.

Donations have been received as follows, from—

Mrs. Kate B. Lathrop, San Francisco: One very fine orchestrone; fifty yards woolen material for girls' dresses and material sufficient for six dresses for large girls; twelve and a half yards gingham; sixteen yards white goods; seven yards embroidery; three bolts and two yards ribbon; four new night shirts and package of clothing; two pairs shoes; one skirt; handkerchiefs for five girls; ribbons, toys, Easter cards; several Century Magazines; three boxes of candy (one each for Christmas, Easter, and July fourth), amounting in all to one hundred and fifty pounds.

Mrs. Caroline T. Bigelow, Oakland: One package of clothing for nursery; children's dolls; play blocks and aprons; one lot of neckties and one hat.

Mrs. Julia M. Judah, San Mateo: Three coats and vests; ribbons for six girls; neckties and collars; one dress; one hat; one coat, and a quantity of silk patchwork.

Mrs. B. V. Weekes, Pescadero: Three coats for boys and quantity of muslin.

Mrs. O. Oakes, Santa Clara: Numerous donations of beautiful cut flowers; plants for our grounds, and tomato plants for gardens.

Mrs. George Taylor, San Francisco: Several packages of clothing; a number of papers and magazines.

Mrs. Hicks, Santa Clara: Package of clothing.

Miss Baker (late of the Home): Two muslin dresses.

Mrs. H. M. Jessup, San Francisco: Two dresses, one Jersey, four yards of wool material.

Mrs. Eleanor A. Yards, Santa Clara: Three hundred grape cuttings, assortment of choice yard plants, tomato plants, cut flowers, and fruits on several occasions.

Miss E. W. Peck, of the Home: Woolen dresses, underclothing, two pair of shoes.

Mr. Dorey, Palace Hotel, San Francisco: Numerous gifts, including back numbers of Century Magazine, cards, calendars, card pictures, and Sunday School offerings.

Mr. John Widney, Santa Clara: Fine assortment of garden plants, small flags, and lot of toys for children.

Mr. Hugh Hamilton, Oakland: Several donations of bread, cake, rolls, baked beans, and candies from his bakery.

Mr. Abram Block, Santa Clara: Several donations of squabs for our table; seventy fruit trees; fifty rooted Tokay vines; eight hundred assorted grape cuttings; also, a large quantity of fruit, and large box of Chinese firecrackers.

Mr. Ariel Lathrop, San Francisco: One thousand assorted grape cuttings.

Mr. John T. Doyle, Menlo Park: One thousand grape cuttings of choice varieties; fifty rooted vines.

Mr. R. L. Hurd, Fresno, Cal.: One scroll saw.

INVENTORY, JULY 1, 1887.

ARTICLE.	Number.	Cost Value.	Total Value.
Axes	2	\$1 50	\$3 00
Augers	1	.....	50
Apple parer	1	.....	75
Bedsteads, iron	68	7 00	476 00
Bedsteads, wood	6	.....	139 00
Bureaus, average	16	8 00	128 00
Buffet	1	.....	23 50
Blankets, white, pairs	13	8 00	104 00
Blankets, colored, pairs	85	4 75	403 75
Block and tackle, set	1	.....	3 50
Brace and bit, set	3	.....	4 50
Boiler, galvanized, 100 gallons	1	.....	34 00
Boiler, mush	1	.....	5 00
Benches, work	4	1 00	4 00
Blackboards	4	2 50	10 00
Bell, large	1	.....	12 75
Bells, table and school	3	.....	4 25
Batteries, electric, outfit	11	.....	20 00
Baskets, hamper	4	6 00	24 00
Baskets, waste	2	60	1 20
Brooms	14	30	4 20
Brooms, whisk	8	15	1 20
Brushes, 16-inch, hair, with handles	5	2 00	10 00
Brushes, scrubbing	6	25	1 50
Brushes, blacking	6	21	1 26

INVENTORY—Continued.

ARTICLE.	Number.	Cost Value.	Total Value.
Blacking, shoe, boxes	15	\$0 05	\$0 75
Blacking, liquid, jars	8	23	1 84
Butter, pounds	81	19	15 39
Barley, pounds	220	01½	2 75
Bran, pounds	490	01	4 90
Beans, pounds	55	02	1 10
Beef, smoked, pieces	2	1 75	3 50
Baking powder, pounds	10	42	4 20
Books, etc.—Arithmetics	5	50	2 50
Story, estimated	5		3 75
Dictionary, unabridged	1		12 00
Readers	48	30	14 40
Geographies	2	50	1 00
Geographical chart	1		1 50
Picture books	11		5 50
Cribs	20	5 00	100 00
Cots	6	2 00	12 00
Clocks	5		83 00
Comfortables	72	1 50	108 00
Chairs, office	4		22 00
Chairs, perforated bottoms	60	75	45 00
Chairs, cane seat	121	1 00	121 00
Chairs, rocker	13	2 25	29 25
Chairs, children's high	5	1 25	6 25
Chairs, children's small	7	70	4 90
Carpets, yards	115½	1 50	172 75
Carpets, stair, yards	13½	2 00	27 00
Carpet mats	27	1 00	27 00
Chandeliers	6		16 80
Curtains, chintz, per pair	5	2 00	10 00
Curtains, parlor, per pair	2	5 00	10 00
Commodore	1		3 50
Cuspidores	3	25	75
Closet, portable	1		4 00
Clothes press	1		6 00
Clothes-bags	8	1 50	12 00
Comb-racks	2	50	1 00
Castors	3		4 25
Coffee-pots	4		4 75
Churn	1		3 50
Coffeemill	1		1 00
Crumb-pans and brushes	2	75	1 50
Colander	1		60
Cake-turners	2	20	40
Candlesticks	6	10	60
Chopping-knife and tray	1		1 75
Cake-pans	2	30	60
Chamber kettles	3	75	2 25
Cultivator	1		12 00
Crowbar	1		1 75
Chisels	8	45	3 60
Chisels, cold	6	25	1 50
Compasses	2	50	1 00
Cows	5		295 00
Calf	1		10 00
Chickens	40	50	20 00
Coal, tons	3½	12 00	42 00
Coffee, pounds	32	16	5 12
Crackers, pounds	52	05½	2 86
Cheese, pounds	35	15	5 25
Candles, pounds	18	10	1 80
Chocolate, pounds	11	21	2 31
Cinnamon (ground), pounds	4	25	1 00
Cocoa, pounds	2	35	70
Codfish, pounds	20	06	1 20
Corn starch, papers	7	09	63
Corn starch, cans	7	10½	74

INVENTORY—Continued.

ARTICLE.	Number.	Cost Value.	Total Value.
Crockery--Cream pitcher (glass)	2		\$4 75
Butter-dish, glass	2	\$0 75	1 50
Celery-dish, glass	2	1 50	3 00
Sugar-dish, glass	2	1 50	3 00
Pitcher, glass	1		2 50
Fruit dish, glass	1		3 00
Spoon dish, glass	2		1 25
Goblets, glass	14	08	1 12
Tumblers, glass	70	07	4 90
Breakfast plates	158	08 1/2	13 17
Dinner plates	20	08 1/2	1 66
Soup plates	24	08 1/2	2 00
Dessert plates	89	08 1/2	7 41
Sauce plates	132	04	5 28
Butter dishes, stone	2	50	1 00
Butter plates, individual	15	03	45
Salt, individual	102	03	3 06
Pitchers, large	6	1 00	6 00
Pitchers, syrup	11	50	5 50
Vegetable dishes	21	66	13 86
Gravy dishes	2	60	1 20
Fruit dishes	8	2	16 00
Pickle plates	2	35	70
Platters	10	45	4 50
Baking plates	6	50	3 00
Mush bowls	47	06	2 82
Egg cups	16	05	80
Cups	168	06	10 28
Saucers	171	06	10 26
Mugs	98	04	3 92
Jelly cups	45	04	1 80
Soup tureen	1		2 75
Fruit jars, Mason's	80	16	12 80
Soap dishes	6	05	30
Spoon holder, stone	1		35
Toilet sets	7	3 00	21 00
Washbowls	1		1 00
Wash pitchers	3	75	2 25
Cream pitcher, stone	1		30
Sugar dish, stone	1		25
Chocolate pot	1		2 00
Desks, school, double	31		127 50
Desks, school, single	20	2 50	50 00
Desks, office	3		51 00
Desks, teachers'	2		15 00
Dust-pans	13	25	3 25
Dippers	6	25	1 50
Drums	2	1 00	2 00
Drawing-knife	1		1 10
Dies	1		16 00
Dies	7		5 25
Drills, steel	2	50	1 00
Engine, six-horse power, with eight-horse boiler	1		400 00
Extension bits	2	1 75 2 50	3 75
Easel	1		4 00
Egg-beater	1		20
Furniture (parlor set, eight pieces)			173 75
Freezer, ice cream	1		4 50
Funnels	2	15	30
Feather duster	1		1 50
Files, flat	4	15	60
Files, O	2	15	30
Files, saw	4	15	60
Fire scooper	1		30
Fire shovel	2	25	50
Forks, stable	3	60	1 80
Flag	1		15 00
Forks, table, plated	53	35	18 55

INVENTORY—Continued.

ARTICLE.	Number.	Cost Value.	Total Value.
Flour, barrels	3	\$5 25	\$15 75
Grate, sets	3	1 12	3 36
Gauge	1		35
Grindstone	1		4 00
Gopher trap	1		5 00
Griddle	1		60
Gelatine, papers	10	12	1 20
Hay, old, tons	55	8 00	440 00
Hay, new, tons	27	11 00	297 00
Harness, double, sets	2		156 00
Harness, single, set	1		45 00
Horses	3		550 00
Hogs	8	7 00	56 00
Horse blankets	3	3 00	9 00
Halters	4	1 25	5 00
Hoes	3	75	2 25
Hose, feet	450	20	90 00
Harrow	1		20 00
Hammers	3	1 00	3 00
Hay forks	2	1 00	2 00
Hand axe	1		1 25
Hat stand	1		15 00
Iron washstand	1		1 50
Irons, smoothing	6	75	4 50
Iron wedges	2	1 00	2 00
Knives and forks	107	12	12 84
Knives, carving sets	2		5 00
Knives, butter	3		2 25
Knives, kitchen	2		2 00
Knives, cleaving	1		1 50
Lounges	2		25 00
Ladders, fire	2	12 00	24 00
Letter press	1		10 00
Lamps, bracket	13	2 00	26 00
Lamps, students	5	5 00	25 00
Lamps, hand	8	2 25	18 00
Lamps, ordinary	12	75	9 00
Lanterns	4	1 50	6 00
Lawn mower	1		11 25
Linoleum, yards	54 $\frac{3}{4}$		58 80
Level, spirit	1		1 25
Mattresses, average	84	4 75	399 00
Mattress covers	20	50	10 00
Mirrors	16	2 00	32 00
Matting, China	80	15	12 00
Matting, cocoa	24	50	12 00
Mattock	1		1 50
Magic lanterns	2		50 00
Molds for jelly	5	70	3 50
Medicines (estimated)			20 00
Map racks, iron	1		12 00
Maps, average	13		25 00
Mats, door	2	1 25	2 50
Muffin rings	2		1 00
Mustard	2 $\frac{1}{2}$	20	50
Molasses	5	40	2 00
Napkins, average	310	05	15 50
Napkin rings	6		1 50
Nippers, pair	1		50
Oilcans	4		1 00
Oilstone	1		1 00
Oilcloth, yards	8	40	3 20
Organette, estimated	1		25 00
Oats, pounds	150	01 $\frac{1}{2}$	2 25
Oil, coal, gallons	35	22	7 70
Oysters, cans	8	20	1 40
Piano	1		200 00
Piano stool	1		4 00
Pillows, large	86	2 00	172 00
Pillows, small	30	1 00	30 00

INVENTORY—Continued.

ARTICLE.	Number.	Cost Value.	Total Value.
Pillow cases	133	\$0 50	\$66 50
Pillow shams	122	20	24 40
Pails, wood and paper	12		2 75
Pails, galvanized	2	1 25	2 50
Pails, milk	2	60	1 20
Pick	1		1 50
Pruning shears, pair	1		1 50
Plow	1		11 50
Planes	3		3 25
Putty knife	1		30
Pliers	1		50
Pans, bread	7	60	4 20
Pans, milk	23	30	6 90
Pans, dish	6	75	4 50
Pans, sauce	12		8 00
Pots, agate	12		20 75
Pots, coffee and tea	3		5 70
Pots, tin	2	30	60
Pots, water	2	35	70
Pipe tongs, pairs	2	3 50	7 00
Punches	2		1 50
Pump, brass force	1		70 00
Pictures and frames (estimated)	20		10 00
Potatoes, bags	2	95	1 90
Pearline, papers	2	20	40
Pepper, pounds	2	15	30
Range	1		163 00
Railing to piano platform			21 50
Robes, carriage	4	4 00	16 00
Rolling pin	1		40
Rack, for towel	1		30
Rakes	2	50	1 00
Rice, pounds	80	04½	3 60
Screens to stoves	5		63 00
Sheets, narrow	300	40	120 00
Sheets, wide	60	60	36 00
Spreads	104	1 25	130 00
Straw ticks	84	85	71 40
Shades for windows, average	45	1 50	67 50
Skimmers	2	10	20
Steamer, six gallons	1		2 50
Shovels and spades	4	1 00	4 00
Scythe	1		1 75
Saws	5		10 25
Squares	4	50	2 00
Stepladder	1		4 50
Screwdrivers	2		45
Scuttles, coal	3		2 25
Sprinkler, lawn	2		3 50
Scales, Fairbank's platform	1		14 00
Scales, apothecaries	1		8 00
Sled	1		6 00
Safe, iron	1		20 00
Stoves, coal and wood	13		175 50
Stoves, oil	2		7 50
Sewing machines	2		75 00
Spoons, table	62	44	27 28
Spoons, tea	104	22	22 88
Scissors, pairs	5	20	1 00
Settee	1		7 00
Safe, meat	1		11 00
Shears, machinist, pairs	1		1 50
Soldering iron	1		1 60
Scraper, plumber's	1		70
Spoke shave	1		40
Saw, 4 feet	1		4 50
Splash rags	15	10	1 50
Spiders	2	35	70
Soda, pounds	225	01½	3 38
Starch, pounds	20	07½	1 50

INVENTORY—Continued.

ARTICLE.	Number.	Cost Value.	Total Value.
Sugar, white, pounds	152	\$0 06	\$9 12
Sugar, brown, pounds	252½	04½	11 34
Salt, pounds	60	01	60
Soap, laundry, pounds	70	04½	3 15
Soap, ivory, pounds	30	08	2 40
Sapolio, bar	1		6 20
Stove polish, dozen	2	50	1 00
Straw, bales	2	1 00	2 00
School appurtenances (estimated)			90 00
Surcingles	3	1 00	3 00
Towels	305	06	18 30
Table cloths	13		26 00
Table covers	12	75	9 00
Tables, laundry	1		8 00
Tables, kindergarten	6	1 50	9 00
Tables, kitchen	4	4 00	16 00
Tables, dining	7		56 00
Tables, extension	2	12 00	24 00
Tables, sewing	1		15 00
Tables, small, average	20	1 50	30 00
Tubs, shower	1		4 00
Tubs, bath, small	1		1 50
Tubs, wash	1		1 00
Tongs, pairs	3		1 50
Try squares	1		40
Trowel	1		88
Tree climbers, pair	1		3 50
Teapots	3		2 00
Trees, single and double, pairs	2		3 50
Tin boilers	1		1 75
Tea, pounds	35	30	10 50
Tomatoes, cans	4	10	40
Vises	2	2 00	4 00
Vases, pairs	4		9 00
Vinegar, gallons	5	30	1 50
Vanilla, extract, quarts	1		1 00
Wardrobes	4	20 00	80 00
Wagonette	1		500 00
Wagon, Studebaker	1		125 00
Wagon, two-horse, spring	1		75 00
Wagon, one-horse, buggy	1		70 00
Wagon jack	1		5 00
Wheelbarrows	2		8 50
Wrenches	2		1 25
Washer cutters	1		1 00
Washboards	4	50	2 00
Wood, cords	27	5 00	135 00
Washstands, average	7	3 50	24 50
Washbowls, tin	12	25	3 00
Waiters	7		4 75
Wrenches, monkey	2		3 50
Whip	1		1 25
Total			\$9,675 42

RECAPITULATION—ASSETS.

Real estate	\$14,000 00
Additional buildings and improvements	14,312 40
Personal property, as inventoried	9,675 42
	\$37,987 82

CLASS II.—STATISTICS, VITAL AND ETIOLOGICAL.

TABLE 1—*Population.*

On October 1, 1886, date of last report, there were sixty-nine (69) inmates—thirty-seven (37) males and thirty-two (32) females. Since that date there have been admitted: Males, 12; females, 4; total, 16.

Since October 1, 1886, there have been discharged and removed (one male by death): Males, 6; females, 6; total, 12.

The present number of inmates is seventy-three (73), divided as follows: Males, 43; females, 30; total, 73. Of this number there are from the counties of—

Alameda	9	Santa Clara	6
Contra Costa	1	Santa Cruz	1
Kern	1	Shasta	1
Lake	1	State at large	1
Los Angeles	4	Tulare	1
Sacramento	1	Ventura	1
San Bernardino	2	Yolo	3
San Francisco	34	Yuba	1
San Joaquin	2		
San Mateo	2	Total	73
Santa Barbara	1		

TABLE 2—*Ages of Inmates.*

SEX.	Between 5 and 10.	Between 10 and 15.	Between 15 and 20.	Between 20 and 25.	Over 25.	Total.
Males	11	15	14	2	1	43
Females	3	8	9	5	5	30
Totals	14	23	23	7	6	73

TABLE 3—*Nativity of Inmates, Total Enrollment from December 19, 1885, to July 1, 1887.*

NATIVITY.	Boys.	Girls.	Total.
Australia		1	1
California	41	19	60
Colorado		2	2
Denmark		1	1
Iowa	2	1	3
Illinois	2	1	3
Kansas		2	2
Missouri	1	1	2
Mexico	1		1
Nebraska	1		1
Nevada	1	2	3
New York	2	3	5
New Jersey		2	2
Nova Scotia	1		1
Norway		1	1
Ohio		1	1
Pennsylvania		2	2
Scotland	1		1
Totals	53	39	92

TABLE 4—*The Cause of Feeble-Mindedness.*

So far as I have been able to ascertain from the often meager and very incomplete histories obtained in most cases, the cause of feeble-mindedness is given in the following:

KNOWN OR PRESUMED CAUSE.	Males.	Females.	Total.
Congenital deficiency	25	24	49
Epilepsy	2	2	4
From a fall	1	2	3
Brain fever	1	—	1
Infantile convulsions	3	1	4
Paralysis	1	—	1
Measles	1	—	1
Congenital syphilis	1	—	1
Whooping-cough	1	—	1
Meningitis	1	—	1
Hydrocephalis	2	—	2
Scarlet fever	—	1	1
Kicked by horse	1	—	1
Cholera infantum	—	2	2
Stroke of lightning	—	1	1
Totals	40	33	73

In conclusion, I desire to state that our Home is indebted to many kind friends who have aided us in the management of the institution with their sympathy, presence, and many substantial gifts. Especially do I desire to here express sincerely our gratitude to Rev. Mr. Newall, pastor of the Presbyterian Church; to Rev. Mr. McCauley, late pastor of the Methodist Church; and to Rev. Mr. Crowell, pastor of the Baptist Church; all of Santa Clara, for their visits to and participations in our regular Sabbath school exercises. Also to Rev. Father Kenna, S. J., President of Santa Clara College; to Father Raggio and his associates, for their ministerial visitations and many courtesies extended to us, all of which we profoundly appreciate. To those who have been associated with me as colaborers, I refer with proudest satisfaction. Throughout every detail of the institution is seen the intelligence, the industry, and the fidelity of those employed. They have earned a substantial public recognition for their meritorious application to their respective duties.

Respectfully submitted.

A. E. OSBORNE,
Superintendent.

FOURTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES OF THE CALIFORNIA HOME

FOR THE

Care and Training of Feeble-Minded Children.

Santa Clara, October 1, 1888.



SACRAMENTO:

STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1888.

OFFICERS OF THE INSTITUTION.

DIRECTORIAL.

BOARD OF TRUSTEES.

MRS. KATHERINE B. LATHROP, President.....	1311 Hyde Street, San Francisco.
MRS. JULIA M. JUDAH	San Mateo.
COL. WM. HARNEY.....	Menlo Park.
ABRAM BLOCK.....	Santa Clara.
JOHN WIDNEY.....	Santa Clara.

TREASURER,

C. C. HAYWARD, Cashier Bank of Santa Clara County, Santa Clara.

SOLICITOR,

COLUMBUS BARTLETT, 12 Montgomery Street, San Francisco.

SECRETARY,

DR. A. E. OSBORNE, Santa Clara.

MANAGERIAL.

EXECUTIVE OFFICERS AND STAFF.

A. E. OSBORNE, M.D., Ph.D., *Superintendent.*

MRS. MARGARET PAXTON OSBORNE, *Matron.*

STEPHEN H. KNAPP, *Clerk.*

Teachers—Grades A and B and Kindergarten School,

MISS E. W. PECK, MISS M. L. PROSEUS,

Repoussé, Calisthenics and Instrumental Music,

A. B. WORRELL.

MISS MARY E. BLANCHARD, *Housekeeper.*

Attendants—Training School Department,

MISS ANNA JONES, MISS ELEANOR BURROWS,

MRS. LULU MCCREERY, MATTHEW MCCREERY.

Asylum Department,

MRS. JENNIE WILSON, MISS LENA SHUMAKER.

Night Attendants,

MISS SARAH F. GREEN, MRS. MARY E. KNOWLES.

MRS. A. J. DOWNING, *Seamstress.*

In Charge of Dining Rooms,

MISS MAME HALLIRAN, MISS NORAH KANE.

In Charge of Cooking,

MRS. EDITH DEVOCOT, JOSEPH MONTERRIO.

In Charge of Laundry,

MRS. ELIZABETH ROBERTS, GRANT BLONDIN.

SEYMOUR J. FISHER, *Engineer.*

CARL CARLSON, *Janitor.*

———, *Farmer.*

B. A. ENGLAND, *Carpenter.*

JNO. COFFEE, *General Helper.*

REPORT.

His Excellency R. W. WATERMAN, Governor:

Agreeably to the provisions of the Act of the Legislature of the State of California, approved March 9, 1887, the undersigned Trustees of the "California Home for the Care and Training of Feeble-Minded Children," respectfully submit to you their fourth annual report.

The Legislature of this State, at its last biennial session, by Act approved March 8, 1887, appropriated twenty-five thousand dollars for the permanent improvements of our buildings and grounds.

Of this amount there has been expended on—

Home buildings (alterations, additions, and extensions).....	\$5,633 24
Water department (wells, tank house, tanks, etc.).....	3,830 63
Laundry department (building, engine, machinery, and general equipment) .	3,217 13
Gas lighting (vault, gasoline machinery, outfit, together with fixtures throughout buildings).....	2,157 00
Farm and grounds (planting of fruit and ornamental trees, laying out and grading driveways, etc.).....	1,536 50
Sewerage (cesspools, drains, and sewers)	894 68
Total.....	\$17,269 18

Leaving a balance of \$7,730 82 for such improvements as we shall find necessary during the fortieth fiscal year. At the same session of the Legislature, above quoted (vide Act approved March 15, 1887) there was appropriated \$63,100 for the purpose of maintenance.

Of this amount we have—

Received and expended, as per report of the Superintendent, hereto appended. .	\$25,731 59
Unexpended balance for fortieth fiscal year.....	37,368 41
	\$63,100 00

From this appropriation we would suggest to reserve the sum of \$9,835 14, with interest, to offset a claim against the State to cover a certain deficiency, which the Legislature of 1887 unfortunately failed to provide for. As already stated in our last annual report to your Excellency, these claims have all been duly passed upon by the State Board of Examiners. And acting under their authorization, we procured the said amount of \$9,835 14 from the Commercial and Savings Bank of San José, at the rate of 8 per cent per annum. It was only by these means that we could liquidate our debts, many of which were owing to employes, mechanics, and trades people, to whom the further delay in payment would have been an excessively severe hardship.

We urgently, yet respectfully, beg that you will direct legislative attention to these claims (now on file at the Executive office), thereby securing an early action of the Legislature in appropriating the amount (with accrued interest) needed.

Under a ruling of the Controller of this State, and agreeably to his suggestions, we have made monthly returns to his office of all receipts obtained from the payment of patrons or parents for the care and

maintenance of their children here, as well as from the sale of products, etc. In former reports this has been called "Income Fund."

Up to this date (October 1, 1888), we have turned over \$4,501 73 and have \$447 on hand ready to be sent to the State Treasurer.

As you are well aware, this money now becomes a part of the State general fund, and although paid to us on account of children here and for their care and maintenance, is lost actually to us, because of no legislation enabling us to use it. We, therefore, ask for legislation, authorizing us to use these moneys so accruing for actual necessities, and that the same when deposited with the State Treasurer shall be placed to our maintenance appropriation, to be drawn against in the usual way, either for improvement or maintenance.

Under the present ruling of the law, if we have a cow, horse, or wagon which has become unserviceable, and we wish to dispose of them, the proceeds goes to the State general fund, and to replace them we have to draw upon our maintenance fund, getting no credit therein for the money received from the property sold.

The census of 1880 gave the number of imbecile children in the State at over five hundred. That this number is far below the truth we have every reason to believe; while the remarkable increase in population in the last eight years in our State very largely increased the number of idiots and feeble-minded worthy of and needing admission to the Home.

As will be seen by referring to the Superintendent's report, one hundred and three children are now in the Home; one hundred application papers for admission are on file in the office of the Institution; while the Superintendent reports large numbers more (probably one hundred) that he either knows of personally or has been reliably informed, exist in the asylums and almshouses of this State, as well as in private families, and for whom no applications have yet been made. At the rate applications have been received during the past year we believe that immediate steps must be taken to provide for three hundred children.

The Trustees have regularly and frequently visited the institution and thoroughly inspected the buildings and the progress of the work, and have every reason to feel proud of the position the institution has obtained in the short time it has been in existence.

In considering the expense which we have been under, which may appear to be great, the nature of our work should be fully understood. Our institution is not simply custodial, but three-fold. We have the care, training, and educating of those within our custody. A large proportion, particularly our epileptic cases, require constant supervision, care, and watching, night as well as day, and some particular cases require individual attention. Such attendants may really be said to "earn their bread by the sweat of their brow," exerting that painful emotion and sympathy that penetrates the heart and exerts the nerve to its utmost efforts.

It must also be borne in mind that for the last six months of the thirty-eighth fiscal year we were left without any appropriation for the maintenance of the institution, thus obliging us to refuse admission to many who were deserving subjects of the State's bounty. We have since admitted as many as our limited means and accommodations would justify.

For the purpose of meeting these demands, additional buildings, to be erected, are necessary.

We would bear testimony to the faithful, energetic, and untiring efforts of all employed in our work to make it what we are sure it has proven itself to be, *i. e.*, a success.

For permanent buildings, suitable for the rapidly increasing demands of the institution, we need \$120,000; and for maintenance, for the forty-first and forty-second fiscal years, we would respectfully recommend that an appropriation be made and allowed by the Legislature of the sum of \$22 50 per month for each and every inmate of the institution now therein and hereafter to be admitted.

The health of the inmates has been uniformly good and free from epidemics. The only deaths during the past year were those named in the Superintendent's report.

At present we have one hundred and three inmates in the institution, and we have over one hundred more applications for admission from different counties of our State. It would, therefore, follow that we are at present in urgent need for more room, in suitable buildings, to accommodate at least two hundred more children which could be admitted had we the room and capacity to accommodate them.

Inasmuch as there is a difference of opinion amongst the members of the Board whether or not it would be advisable to erect the additional new buildings upon the present premises, or to select another place by the foothills of Santa Clara County for future and permanent purposes, we would respectfully suggest that your Excellency view the premises now at Santa Clara, and the Board of Trustees will ratify your Excellency's opinion whether or not it would be better and wiser to move our present institution to some other place, or remain in the present location.

For the purpose of erecting the additional buildings required, and before alluded to, an appropriation of \$120,000 would be required, provided we are to remain in the present location; if it is decided to move to another place than the present, then the appropriation would have to be increased.

Appended hereto will be found the Superintendent's report in full, containing itemized and detailed accounts of the financial and other operations of the Home for the past year, together with his recommendations.

All of which is respectfully submitted.

MRS. KATHERINE B. LATHROP,
President.

WILLIAM HARNEY,
A. BLOCK,
JOHN WIDNEY,

Trustees.

REPORT OF THE SUPERINTENDENT.

To the Board of Trustees of the California Home for the Care and Training of Feeble-Minded Children:

MESDAMES AND SIRS: In accordance with the requirements of the law, and of your Board, I beg leave to submit herewith the following as, and for, my annual report, exhibiting the statistics and operations of this institution for the fiscal year ending June 30, 1888:

TABLE 1—MOVEMENT OF THE POPULATION FOR INMATES.

	Males.	Females.	Total.
Census of July 1, 1887	44	30	74
Admissions, July 1, 1887, to July 1, 1888	13	16	29
Total for the year	57	46	103
Discharged	3	3	6
Died	4		4
Total	7	3	10
Census of July 1, 1888	50	43	93
Admissions, July 1, 1888, to October 1, 1888	10	7	17
Total	60	50	110
Discharged, July 1, 1888, to October 1, 1888	2	5	7
Present population, October 1, 1888	58	45	103

Of those who died during the year, two were training school cases and two asylum cases. Of the former class, J. S. was a middle grade imbecile, aged nineteen, and a confirmed epileptic. Cause of death, apopleptic coma supervening upon an epileptic seizure of unusual severity.

J. H., also a middle grade imbecile, aged sixteen, died of diffusive idiopathic peritonitis. Of the asylum cases, both were low grade, unable to speak, more or less helpless, and showing marked hereditary taint. T. M. G. was eight years old, and had been a sufferer from infancy from right inguinal hernia. This became strangulated, and serious symptoms quickly following, it was deemed necessary to perform the usual surgical operation for such cases. This latter was skillfully performed by Dr. A. W. Saxe, the consulting surgeon to the Home. The child died the following day, and at the autopsy several and severe obstructions of the bowels were found, above and beyond the hernial region, which had been caused by the ingestion of indigestible foreign bodies, and which, further, of themselves were sufficient to cause death.

The last case, B. P., was seven years old, and died after many weeks of heroic suffering, from phthisis pulmonalis.

The following table is designed to exhibit not only the monthly expenditure but also the average per diem attendance of the inmates, the average per diem expense for all purposes, and also per inmate, the per diem population (including all persons connected with the institution, or pay), and lastly, the per diem cost per total population.

I desire to specially draw attention to the fact that these expenditure amounts represent all expense of whatever kind and however incurred in the regular support of the Home. They include coal supply, house finishing, and furnishings and equipment, as well as items of purely maintenance and salary. This being borne in mind, the various averages will be found relatively lower than they might otherwise appear.

TABLE 2.

MONTH.	Total Expenditures.	Average per Diem. Expenditures.	Average per Diem. Attendance Inmates.	Average Cost per Diem per Inmate.	Average per Diem Population, includes Staff, etc.	Average per Diem Cost per Whole Population.
July, 1887	\$1,807 52	\$58 30	77	\$0 78.3	94	\$0 62.0
August, 1887	2,292 85	73 96	79	93.6	97	76.2
September, 1887	1,485 95	49 53	81	61.1	100	49.5
October, 1887	1,855 31	59 84	82	72.9	101	59.2
November, 1887	2,168 03	72 26	84	86.0	106	68.1
December, 1887	2,586 15	83 42	88	94.7	112	74.4
January, 1888	2,522 25	81 36	90	90.4	114	71.3
February, 1888	2,120 33	73 10	91	80.3	116	63.0
March, 1888	2,356 32	76 01	92	82.6	117	64.9
April, 1888	2,101 61	70 05	93	75.4	116	60.8
May, 1888	2,016 13	65 03	95	68.4	120	54.0
June, 1888	2,226 64	74 22	93	79.7	117	63.0
Totals	\$25,539 09	\$837 08	1,045	\$0 80.4	1,310	\$0 63.0

TABLE 3.

The following table exhibits the movement of the population by counties, etc., year ending June 30, 1888:

COUNTIES.	Census, July 1, 1887.	Admissions.	Discharges.	Census, July 1, 1888.
Alameda.....	9	2		11
Butte.....		1		1
Contra Costa.....	1			1
Fresno.....		1		1
Humboldt.....		1		1
Kern.....	1			1
Lake.....	1			1
Los Angeles.....	4	2	1	5
Monterey.....		1		1
Placer.....		1		1
Sacramento.....	1		1	
San Bernardino.....	2			2
San Benito.....		1		1
San Francisco.....	34	9	4	39
San Joaquin.....	2	1		3
San Mateo.....	2			2
Santa Barbara.....	1			1
Santa Clara.....	6	2	1	7
Santa Cruz.....	1			1
Shasta.....	1			1
Sutter.....		1		1
Solano.....		1		1
Tulare.....	1	1		2
Tehama.....		1		1
Ventura.....	1	1	1	1
Yolo.....	3	1	1	3
Yuba.....	1			1
State at large.....	1			1
Hawaiian Islands.....		1		1
Totals.....	73	29	9	93

TABLE 4—THE CAUSE OF FEEBLE-MINDEDNESS.

So far as we have been able to ascertain from the incomplete histories obtainable in most cases, causation is given as follows:

KNOWN OR PRESUMED CAUSE.	Males.	Females.	Total.
Congenital deficiency.....	29	26	55
Epilepsy.....	2	4	6
Accident.....	2	5	7
Brain fever.....	1		1
Infantile convulsions.....	5	2	7
Paralysis.....		1	1
Measles.....	2		2
Congenital syphilis.....	1		1
Whooping cough.....	1		1
Meningitis.....	1		1
Hydrocephalus.....	2		2
Scarlet fever.....		1	1
Cholera infantum.....	1	2	3
Stroke of lightning.....		1	1
Shock during pregnancy.....	1	1	2
Unknown.....	2		2
Totals.....	50	43	93

TABLE 5.—AGES OF INMATES.

SEX.	Between 5 and 10.	Between 10 and 15.	Between 15 and 20.	Between 20 and 25.	Over 25.	Total.
Males	11	18	17	3	1	50
Females	4	9	14	8	8	43
Totals	15	27	31	11	9	93

TABLE 6.—NATIVITY OF INMATES AND TOTAL ENROLLMENT FROM DECEMBER 10, 1885, TO OCTOBER 1, 1888.

NATIVITY.	Male.	Female.	Total.
Alabama	2		2
Australia		1	1
California	56	35	91
Colorado		2	2
Denmark		1	1
England	1		1
Germany		1	1
Hawaiian Islands	1		1
Iowa	2	1	3
Illinois	3	1	4
Kansas	1	4	5
Massachusetts		2	2
Missouri	1	1	2
Mexico	1		1
Nebraska	3		3
Nevada	2	2	4
New York	2	3	5
New Jersey		2	2
Nova Scotia	1		1
Norway		1	1
Ohio		2	2
Pennsylvania		2	2
Scotland	1		1
Totals	77	61	138

Of the number discharged (nine), four represent deaths and the remainder were taken away by their parents. Of this last number (five), one is an applicant for readmission, two, both boys, are attending public schools and doing well, and two, both girls, are able, through their training in the Home, to return to their parents capable of self-control, under parental supervision, and of performing the ordinary household duties. The one noted as an applicant for readmission is a hospital case, concerning which grade I shall have something to say further on in this report.

TABLE 7.

As a fair classification according to ability, I here append the movement of our household for a recent day (September 28, 1888), on which date we had one hundred and three inmates:

Boys.				Girls.				Total.			
Boys.				Girls.				Total.			
On farm	1		1	In school	39	26	65				
On garden and grounds	3		3	In asylum	11	12	23				
Absent	1		1	In kitchen	1		1				
In laundry	1	5	6	Special work	1	2	3				

Besides the above, a large class find employment and industrial drill (outside of regular school duties) in the dining rooms, dormitories, sewing rooms, in the clothes rooms, and at various other simple occupations, the idea being to train all the inmates, that are physically and mentally able, to some light and suitable, and, at the same time pleasing, work, and thus stimulate them to greater duties and responsibilities. In this light the above table must not be taken as expressing the only number able to work, as the lines indicated. Thus we have half a score of boys able to work on the farm, and who assist there when needed, while a much larger corps has done splendid work during the past six months upon our grounds and gardens, in digging, cutting wood and piling it for winter use, working among the trees, etc.

TABLE 8.

The following School Roster is of interest, as showing the studies pursued and the number in the respective classes:

STUDIES.	Boys.	Girls.	Total.
Alphabet.....	14	6	20
Arithmetic, numbers, counting, and making figures.....	17	7	24
Arithmetic, addition to fractions.....	9	6	15
Arithmetic, easy problems.....	1	3	4
Arithmetic, fractions.....	1	1	2
Articulation, first efforts.....	1	6	7
Articulation, pronouncing in one syllable.....	2	—	2
Articulation, short sentences.....	5	1	6
Art and decorative work, crocheting.....	—	5	5
Art and decorative work, drawing.....	6	4	10
Art and decorative work, outlining.....	—	6	6
Art and decorative work, paper folding.....	5	4	9
Art and decorative work, hemstitching.....	—	4	4
Art and decorative work, general needlework.....	—	8	8
Art and decorative work, embroidery.....	—	3	3
Art and decorative work, knitting.....	—	8	8
Art and decorative work, repousse.....	4	4	8
Art and decorative work, wood carving.....	1	—	1
Calisthenics.....	15	10	25
Geography, elementary.....	7	6	13
History, United States.....	4	4	8
Kindergarten, first lessons.....	10	12	22
Kindergarten, sewing and weaving.....	17	10	27
Kindergarten, designs.....	5	4	9
Kindergarten, games and exercises.....	25	7	32
Music, instrumental.....	8	3	11
Music, vocal.....	2	5	7
Penmanship, first lesson.....	8	4	12
Penmanship, words and sentences.....	7	5	12
Penmanship, from copy.....	2	—	2
Penmanship, specimen copy, 1 to 7.....	5	6	11
Reading, first reader.....	8	4	12
Reading, second reader.....	4	2	6
Reading, third and fourth readers.....	2	4	6
Night school, seven to eight o'clock, miscellaneous.....	—	—	25

Our school work has been a matter of pride and self-congratulation. Splendid progress has been made by most of the pupils, while all have shown marked improvement. A conscientious, self-sacrificing devotion to their labors has marked the work of Misses E. W. Peck and M. L. Proseus, our regular teachers, whose efforts it is a pleasure to thus publicly commend.

The special work of Mr. A. B. Worrell in industrial training and music deserves also recognition. A host of letters from parents and relatives testify to the appreciation on the part of our patrons of our efforts in this direction.

A marked and interesting feature of the practical side of the instruction given, is that of having home letters written by the children. These letters serve a two-fold purpose. They prove to the parent the actual progress being made by the child, for they reflect his mental strength and receptivity, and they tend to strengthen the bond of sympathy and the burden of responsibility that should ever be cultivated in the child's heart, to the end that his family relation be neither lessened nor forgotten.

Following will appear a series of schedules of accounts, covering the whole field of the financial transactions for the fiscal year, ending June 30, 1888. Agreeably to the provisions of the Act of the Legislature, approved March 9, 1887, the details of certain tables are omitted, as for instance the names of children from whose parents payments have been received on account of the care and training of the former, etc.:

These tables, however, arranged in monthly series, I have duly filed in the office of the Controller of the State, and the aggregate amounts I here give correspond with the same:

SCHEDULE A.

Receipts from parents and others on account of maintenance of children at the Home	\$2,376 00
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SCHEDULE B.

Receipts from Sale of Products, etc.

Hay	\$340 12
Stock (cows)	66 00
Junk	7 46
Rebate on bill of San José Mercury Company	9 00
Total	\$422 58

SCHEDULE C.

Special Payments Made to the Board of Trustees.

These payments are made to and held by the Board of Trustees, by provision of and under the authority of the Act of the Legislature, approved March 9, 1887, heretofore mentioned.

August 9, 1887—On account of Nellie Toomes	\$100 00
October 26, 1887—On account of S. N. Hundley	125 00
March 2, 1888—On account of Memorial Fund	5 00
March 2, 1888—On account of Memorial Fund	10 00
April 22, 1888—On account of S. N. Hundley	25 00
May 31, 1888—On account of Lulu Bacon	10 00
June 28, 1888—On account of Amusement Fund	50 00
June 28, 1888—On account of Memorial Fund	400 00
Total	\$725 00

SCHEDULE D.

Receipts, in Warrants and Coin, from State Controller, on Account of Appropriation for Maintenance, Thirty-ninth Fiscal Year.

July 31, 1887—Warrants	\$25 00
August 23, 1887—Warrants	1,807 52
October 4, 1887—Warrants	2,188 47
October 8, 1887—Warrants	167 50
October 29, 1887—Warrants	1,455 95
November 25, 1887—Warrants	1,860 06
December 19, 1887—Warrants	2,162 41
January 28, 1888—Coin	2,406 60
February 20, 1888—Coin	2,447 25
March 21, 1888—Coin	2,120 33
April 17, 1888—Coin	2,356 32
May 11, 1888—Coin	2,101 61
June 12, 1888—Coin	2,016 13
July 27, 1888—Coin, in payment of June bills	2,226 64
Total	\$25,342 39

SCHEDULE E.

Receipts, in Warrants and Coin, from State Controller, on Account of Appropriation for Improvements, Thirty-ninth Fiscal Year.

July 21, 1887—Warrants	\$601 56
July 31, 1887—Warrants	1,371 43
October 8, 1887—Warrants	20 00
October 29, 1887—Warrants	479 92
November 3, 1887—Warrants	3,406 13
November 25, 1887—Warrants	1,081 09
December 19, 1887—Warrants	110 00
January 28, 1888—Coin	192 79
February 20, 1888—Coin	1,238 22
March 21, 1888—Coin	3,392 95
April 17, 1888—Coin	199 70
May 11, 1888—Coin	2,696 17
June 12, 1888—Coin	1,928 53
July 27, 1888—Coin, in payment of June bills	550 69
Total	\$17,269 18

SCHEDULE F.

Disbursements Made from State Appropriation for Maintenance.

July 31, 1887—J. J. McDaniel, labor	\$25 00
August 26, 1887—Payroll for July, salaries	753 60
August 26, 1887—S. Foster & Co., supplies	435 02
August 26, 1887—O. A. Hale & Co., dry goods	109 06
August 26, 1887—T. L. Williams, meats	82 53
August 26, 1887—J. H. Johnson, laundry	43 00
August 26, 1887—John Sallows, farm work	41 25
August 26, 1887—John Widney, supplies	35 60
August 26, 1887—Manuel Rodgers, potatoes	29 80
August 26, 1887—Mary Rodgers, laundry	27 50
August 26, 1887—Neville & Co., tents, etc.	27 20
August 26, 1887—"Journal," Santa Clara, advertising	27 70
August 26, 1887—S. Oberdeener, drugs and medicines	25 18
August 26, 1887—C. Hicks & Co., shoes and repairing	24 40
August 26, 1887—R. B. Donovan, meats, etc.	24 25
August 26, 1887—J. Cereghino, vegetables and fruits	23 30
August 26, 1887—E. H. Guppy & Son, stationery	21 35
August 26, 1887—San José Laundry Association, laundry	20 00
August 26, 1887—J. B. O'Brien, dry goods	16 28
August 26, 1887—The Bancroft Co., school supplies	13 60
August 26, 1887—Holbrook, Merrill & Stetson, kitchen furniture	13 50

August 26, 1887—Charles A. Judd, furniture.....	\$5 00
August 26, 1887—San Francisco "Chronicle," advertising.....	8 40
October 6, 1887—Payroll for August, salaries.....	785 91
October 6, 1887—S. Foster & Co., supplies.....	802 79
October 6, 1887—T. L. Williams, meats.....	110 00
October 6, 1887—Farmers Union, supplies.....	63 63
October 6, 1887—J. Widney, supplies.....	63 35
October 6, 1887—G. Blondin, laundry.....	57 50
October 6, 1887—A. E. Osborne, contingent expenses.....	57 35
October 6, 1887—Edw. Myall, cow.....	55 00
October 6, 1887—S. Oberdeener, drugs, etc.....	48 82
October 6, 1887—O. A. Hale & Co., dry goods.....	50 87
October 6, 1887—J. Cereghino, vegetables.....	19 85
October 6, 1887—E. S. Bradlee, piano repairs.....	6 00
October 6, 1887—San Francisco "Chronicle," advertising.....	1 30
October 6, 1887—A. E. Osborne, expenses.....	66 10
October 18, 1887—Truman S. Clark & Son, furniture.....	167 50
November 2, 1887—Payroll for September, salaries.....	791 98
November 2, 1887—S. Foster & Co., supplies.....	129 90
November 2, 1887—Farmers Union, supplies.....	115 33
November 2, 1887—O. A. Hale & Co., dry goods.....	102 18
November 2, 1887—T. S. Williams, meats, etc.....	89 26
November 2, 1887—G. Blondin, laundry.....	66 00
November 2, 1887—J. Cereghino, vegetables.....	22 00
November 2, 1887—S. Oberdeener, drugs, etc.....	20 50
November 2, 1887—Manuel Rodgers, potatoes.....	33 55
November 2, 1887—W. E. Wadams, veterinarian.....	20 00
November 2, 1887—R. H. Quincy, ice.....	19 35
November 2, 1887—Truman S. Clark & Son, repairs.....	12 25
November 2, 1887—E. H. Guppy & Son, stationery.....	10 75
November 2, 1887—F. E. Farmer, stationery.....	10 25
November 2, 1887—A. E. Osborne, expenses.....	8 65
November 2, 1887—J. M. Raney, expenses.....	4 00
November 26, 1887—S. Foster & Co., supplies.....	223 19
November 26, 1887—H. S. Kelley, laundry.....	198 70
November 26, 1887—Ant. Fatgo, supplies.....	111 05
November 26, 1887—O. A. Hale & Co., dry goods, etc.....	83 62
November 26, 1887—Farmers Union, supplies.....	83 25
November 26, 1887—T. L. Williams, meats, etc.....	69 17
November 26, 1887—Louis Duncan, vegetables and fruits.....	41 25
November 26, 1887—C. Hicks & Co., shoes and repairs.....	41 05
November 26, 1887—A. E. Osborne, expenses.....	31 20
November 26, 1887—Robert Menzell, supplies.....	26 35
November 26, 1887—A. W. Sehorn & Co., supplies.....	22 75
November 26, 1887—Tureman & Judah, furniture.....	20 00
November 26, 1887—Methodist Book Repository, school supplies.....	18 30
November 26, 1887—S. Oberdeener, drugs.....	16 97
November 26, 1887—Goodyear Rubber Company, rubber goods.....	15 00
November 26, 1887—J. Cereghino, vegetables.....	14 65
November 26, 1887—E. H. Guppy & Son, stationery.....	14 25
November 26, 1887—"Mercury" Printing Company, advertising.....	10 50
November 26, 1887—San José Furniture Company, furniture.....	30 00
November 26, 1887—A. W. Sehorn, groceries.....	4 92
November 26, 1887—Payroll for October, salaries.....	784 49
December 19, 1887—Payroll for November, salaries.....	880 00
December 19, 1887—A. S. Kelley, laundry.....	291 70
December 19, 1887—S. Foster & Co., supplies.....	249 92
December 19, 1887—Farmers Union, supplies.....	154 25
December 19, 1887—O. A. Hale & Co., dry goods.....	77 68
December 19, 1887—R. Menzell, supplies.....	74 90
December 19, 1887—Best & Williams, meats, etc.....	74 86
December 19, 1887—Universal Bakery, bread, etc.....	51 60
December 19, 1887—J. Ruth, provisions.....	40 10
December 19, 1887—A. E. Osborne, contingent expenses.....	34 70
December 19, 1887—Golden Gate Woolen Mills, blankets.....	30 50
December 19, 1887—E. A. Thompson, cow.....	30 00
December 19, 1887—F. W. Munch, horseshoeing, etc.....	24 50
December 19, 1887—Tureman & Judah, furniture.....	23 30
December 19, 1887—S. Oberdeener, drugs, etc.....	18 20
December 19, 1887—John A. Nace, stationery and printing.....	15 55
December 19, 1887—J. Cereghino, vegetables.....	13 05
December 19, 1887—E. H. Guppy & Son, stationery.....	12 05
December 19, 1887—S. H. Knapp, expenses.....	11 75
December 19, 1887—John Stocks Sons, hardware.....	4 50
December 19, 1887—Benjamin Fish, bull.....	50 00

January 28, 1888—Payroll for December, salaries	\$938 00
January 28, 1888—S. Foster & Co., supplies	578 27
January 28, 1888—H. S. Kelley, laundry	260 75
January 28, 1888—Farmers Union, supplies	119 13
January 28, 1888—John T. Terry & Co., furniture	77 50
January 28, 1888—O. A. Hale & Co., dry goods	62 21
January 28, 1888—Best & Williams, meats, etc.	59 68
January 28, 1888—Mrs. Kate B. Lathrop, traveling expenses	47 85
January 28, 1888—Robert Menzell, stoves, etc.	41 90
January 28, 1888—S. Oberdeener, drugs, etc.	34 85
January 28, 1888—Louis Duncan, vegetables and fruit	34 31
January 28, 1888—Dr. A. E. Osborne, expenses	28 00
January 28, 1888—Mrs. J. M. Judah, traveling expenses	23 60
January 28, 1888—William Harney, traveling expenses	36 70
January 28, 1888—Bancroft & Co., school supplies	19 50
January 28, 1888—J. M. Beach, cattle feed	14 00
January 28, 1888—S. H. Knapp, expense	13 45
January 28, 1888—Mrs. M. B. Carey, sewing	12 00
January 28, 1888—"The Journal," subscription	2 50
January 28, 1888—Truman S. Clark & Son, expense	2 40
February 20, 1888—Payroll for January, 1888, salaries	931 70
February 20, 1888—S. Foster & Co., supplies	402 08
February 20, 1888—H. S. Kelley, laundry	312 35
February 20, 1888—Wm. S. Badger, piano	200 00
February 20, 1888—Farmers Union, supplies	166 32
February 20, 1888—J. Widney, supplies	104 23
February 20, 1888—O. A. Hale & Co., dry goods	97 58
February 20, 1888—Best & Williams, meats, etc.	64 61
February 20, 1888—Dr. A. E. Osborne, expenses	33 95
February 20, 1888—J. Cereghino, vegetables	31 10
February 20, 1888—S. Oberdeener, drugs	26 34
February 20, 1888—A. A. Withrow, repairs	15 75
February 20, 1888—R. Howes, fish, etc.	14 50
February 20, 1888—Geo. Welch, insurance	11 25
February 20, 1888—Robt. Menzell, kitchen furniture	10 20
February 20, 1888—R. H. Quincy, ice	9 00
February 20, 1888—E. H. Guppy & Son, stationery	8 85
February 20, 1888—E. A. Yards, fruit	5 19
February 20, 1888—Geo. B. McKee & Co., expense	1 25
February 20, 1888—John Stock's Sons, expense	1 00
March 21, 1888—Payroll for February, salaries	943 67
March 21, 1888—San José Laundry Association, laundry work	272 35
March 21, 1888—S. Foster & Co., supplies	254 97
March 21, 1888—W. J. Sloane & Co., carpets	253 49
March 21, 1888—Best & Williams, meats, etc.	81 86
March 21, 1888—Farmers Union, supplies	67 13
March 21, 1888—C. Hicks & Co., shoes and repairing	56 05
March 21, 1888—J. B. O'Brien, dry goods	36 67
March 21, 1888—R. Howes, fish, etc.	21 36
March 21, 1888—J. Cereghino, vegetables	18 80
March 21, 1888—Universal Bakery, bread	18 45
March 21, 1888—Tureman & Judah, furniture	16 03
March 21, 1888—Dr. A. E. Osborne, expenses	12 91
March 21, 1888—S. Oberdeener, drugs, etc.	12 65
March 21, 1888—Santa Clara Valley Land Association, insurance	11 25
March 21, 1888—Geo. B. McKee & Co., repairs	10 55
March 21, 1888—R. A. Logan, newspapers	10 55
March 21, 1888—O. A. Hale & Co., dry goods	8 34
March 21, 1888—H. S. Crocker & Co., school supplies	8 00
March 21, 1888—Holbrook, Merrill & Stetson, repairs	2 50
March 21, 1888—E. H. Guppy & Son, stationery	2 25
March 21, 1888—John Stock's Sons, expenses	50
April 17, 1888—Payroll for March, salaries	948 42
April 17, 1888—S. Foster & Co., supplies	455 99
April 17, 1888—San José Laundry Association, laundry	313 95
April 17, 1888—Cook & Watson, insurance	145 25
April 17, 1888—Farmers Union, supplies	128 37
April 17, 1888—Best & Williams, meats, etc.	96 49
April 17, 1888—Truman S. Clark & Son, furniture	45 00
April 17, 1888—O. A. Hale & Co., dry goods	32 87
April 17, 1888—S. Oberdeener, drugs, etc.	32 16
April 17, 1888—Jos. Fredericks & Co., dry goods	30 07
April 17, 1888—Robt. Menzell, repairs	29 63
April 17, 1888—A. Laurillard, repairs	25 00
April 17, 1888—A. E. Osborne, M.D., expense	20 45

April 17, 1888—J. Cereghino, vegetables, etc.	\$18 95
April 17, 1888—R. Howes, fish, etc.	17 47
April 17, 1888—Theo. Messinger, expense	14 60
April 17, 1888—R. A. Logan, newspapers	1 65
May 12, 1888—Payroll for April, salaries	926 40
May 12, 1888—San José Laundry Association, laundry	380 25
May 12, 1888—S. Foster & Co., supplies	177 64
May 12, 1888—J. Widney, supplies	112 52
May 12, 1888—Best & Williams, meats, etc.	81 41
May 12, 1888—Ant. Fatgo, supplies	66 95
May 12, 1888—Farmers Union, supplies	61 76
May 12, 1888—O. A. Hale & Co., dry goods	25 91
May 12, 1888—R. Howes, fish, etc.	25 35
May 12, 1888—J. Cereghino, vegetables, etc.	9 33
May 12, 1888—Truman S. Clark & Son, furniture	21 25
May 12, 1888—John A. Nace, stationery	21 00
May 12, 1888—Chas. S. Eaton, school supplies	13 05
May 12, 1888—J. N. Thompson, expense	9 48
May 12, 1888—E. H. Guppy & Son, stationery	8 05
May 12, 1888—Loftus Bros., expense	7 50
May 12, 1888—J. E. Southworth, clock	5 00
May 12, 1888—E. H. Davis, expense	3 75
May 12, 1888—Bancroft Company, school supplies	2 86
May 12, 1888—Robt. A. Logan, newspapers	1 65
May 12, 1888—F. W. Munch, expense and repairs	18 85
May 12, 1888—Jesse Toney, farmwork	80 75
May 12, 1888—W. T. Garratt & Co., bell	12 50
May 12, 1888—A. E. Osborne, M.D., expenses	28 40
June 14, 1888—Payroll for May, salaries	961 67
June 14, 1888—S. Foster & Co., supplies	448 80
June 14, 1888—Farmers Union, supplies	148 83
June 14, 1888—San José Laundry Association, laundry	127 45
June 14, 1888—Best & Williams, meats, etc.	84 03
June 14, 1888—S. Oberdeener, drugs, etc.	58 25
June 14, 1888—O. A. Hale & Co., dry goods, etc.	36 94
June 14, 1888—Universal Bakery, bread, etc.	31 00
June 14, 1888—R. Howes, fish, etc.	25 90
June 14, 1888—J. Cereghino, vegetables, etc.	25 70
June 14, 1888—Jesse Toney, farmwork	10 00
June 14, 1888—E. H. Guppy & Son, stationery	7 50
June 14, 1888—H. S. Crocker & Co., school supplies	4 75
June 14, 1888—McNeil Bros., school supplies	2 50
June 14, 1888—R. A. Logan, newspapers	1 65
June 14, 1888—R. H. Quincy, ice	15 63
June 14, 1888—Dr. A. E. Osborne, expenses	19 03
June 14, 1888—A. B. Worrell, school supplies	6 50
July 27, 1888—Payroll for June, salaries	944 83
July 27, 1888—S. Foster & Co., supplies	335 18
July 27, 1888—Dr. A. W. Saxe, medical services	200 00
July 27, 1888—J. Widney, supplies	110 99
July 27, 1888—R. B. Donovan, cows	100 00
July 27, 1888—Farmers Union, supplies	85 39
July 27, 1888—Best & Williams, meats, etc.	78 78
July 27, 1888—C. Hicks & Co., shoes and repairing	52 20
July 27, 1888—S. Oberdeener, drugs, etc.	37 65
July 27, 1888—Mrs. Kate B. Lathrop, traveling expenses	34 50
July 27, 1888—Dr. A. E. Osborne, expenses	34 10
July 27, 1888—J. B. O'Brien, dry goods	33 27
July 27, 1888—William Fleury, undertaker	25 50
July 27, 1888—Geo. B. McKee & Co., repairs	23 00
July 27, 1888—R. Howes, fish, etc.	18 47
July 27, 1888—Mrs. Julia M. Judah, traveling expenses	18 10
July 27, 1888—R. Menzell, repairs, etc.	17 35
July 27, 1888—J. Widney, traveling expenses	17 05
July 27, 1888—J. Cereghino, vegetables, etc.	16 05
July 27, 1888—William Harney, traveling expenses	15 50
July 27, 1888—H. Killeen, repairs	12 00
July 27, 1888—San Francisco "Chronicle," advertising	3 20
July 27, 1888—O. A. Hale & Co., dry goods, etc.	6 18
July 27, 1888—A. Withrow, repairs	3 00
July 27, 1888—Robt. A. Logan, newspapers	2 30
July 27, 1888—Osborn & Alexander, school supplies	2 50

Amounting to.....\$25,342 39

SCHEDULE G.

Disbursements Made from State Appropriation for Improvements.

July 21, 1887—Claims of indebtedness incurred prior to July 1, 1887 (as per Schedule H of my report for the thirty-eighth fiscal year).....	\$601 56
July 31, 1887—Claims of indebtedness incurred prior to July 1, 1887 (as per Schedule H of my report for the thirty-eighth fiscal year).....	1,371 43
October 8, 1887—B. A. England, wages.....	20 00
November 2, 1887—Pacific Manufacturing Company, lumber, etc.....	304 92
November 2, 1887—L. B. Garrigus, painting.....	145 00
November 2, 1887—B. A. England, wages.....	26 00
November 2, 1887—Duanes & Vadoran, cement.....	4 00
November 3, 1887—William F. Wilson, gaslight works.....	2,153 00
November 3, 1887—William F. Wilson, plumbing, etc.....	1,076 13
November 3, 1887—William F. Wilson, hot water apparatus.....	150 00
November 3, 1887—B. A. England, wages.....	27 00
November 30, 1887—J. J. McDaniels, carpenter work.....	680 00
November 30, 1887—Pacific Manufacturing Company, lumber.....	238 59
November 30, 1887—J. J. McDaniels, carpenter work.....	135 50
November 30, 1887—B. A. England, wages.....	27 00
December 20, 1887—H. Killeen, plastering.....	35 00
December 20, 1887—B. A. England, wages.....	26 00
December 20, 1887—W. F. Wilson, plumbing.....	49 00
February 1, 1888—Robert Menzell, water pipe, etc.....	69 35
February 1, 1888—Geo. B. McKee & Co., paper hanging and painting.....	46 90
February 1, 1888—Geo. Rines, boring well.....	30 00
February 1, 1888—B. A. England, wages.....	26 00
February 1, 1888—A. Steiger & Son, sewer pipe.....	20 54
February 23, 1888—Coleman & Co., painting.....	428 85
February 23, 1888—Geo. W. Page, architect.....	122 00
February 23, 1888—Pacific Manufacturing Company, lumber.....	89 36
February 23, 1888—William Wilson, plumbing.....	540 01
February 23, 1888—B. A. England, wages.....	27 00
February 23, 1888—L. B. Coleman, painting.....	23 00
February 23, 1888—Robert Menzell, plumbing material.....	8 00
March 23, 1888—J. J. McDaniels, building contract.....	1,360 00
March 23, 1888—L. B. Ingalls, foundation contract.....	260 00
March 23, 1888—J. J. McDaniels, carpenter labor.....	125 45
March 23, 1888—Pacific Manufacturing Company, lumber.....	121 20
March 23, 1888—Jesse Toney, plowing.....	107 40
March 23, 1888—Dr. A. E. Osborne, freight on machinery.....	30 90
March 23, 1888—B. A. England, wages.....	26 00
March 23, 1888—Frank Bray, boiler and engine.....	800 00
March 23, 1888—J. J. McDaniels, carpenter work.....	97 00
March 23, 1888—M. A. Barbour, laundry machine.....	150 00
March 23, 1888—Adams' Laundry Manufacturing Co., laundry machine.....	165 00
March 23, 1888—Crawford & Poland, laundry machine.....	150 00
April 20, 1888—California Nursery Company, trees.....	105 80
April 20, 1888—Robert Menzell, laundry fixtures.....	32 20
April 20, 1888—A. E. Osborne, M.D., freight on machine.....	27 70
April 20, 1888—B. A. England, labor.....	27 00
April 20, 1888—J. J. McDaniels, carpenter work.....	7 00
May 14, 1888—J. J. McDaniels, contract laundry building.....	1,575 50
May 14, 1888—R. D. Fox, trees and shrubbery.....	189 90
May 14, 1888—Robert Menzell, plumber supplies.....	184 31
May 14, 1888—John Sallows, grading.....	179 50
May 14, 1888—Robert Cole, landscape gardener.....	232 50
May 14, 1888—Robert Sallows, labor.....	26 00
May 14, 1888—Emanuel Alvish, labor.....	24 75
May 14, 1888—Albert Weidemann, labor.....	13 50
May 14, 1888—George W. Martin, labor.....	10 13
May 14, 1888—B. A. England, labor.....	24 00
May 14, 1888—J. Chapman, labor.....	6 25
May 14, 1888—Jos. Silva, cutting grove.....	176 75
May 14, 1888—Farmers Union, belting.....	48 45
May 14, 1888—F. W. Munch, iron.....	4 63
June 15, 1888—P. R. Wells, contract tank and house.....	1,585 95
June 15, 1888—William Grey, machinist.....	82 44
June 15, 1888—J. H. Griswold, shafting, etc.....	80 00
June 15, 1888—Albert Weidemann, labor.....	36 00
June 15, 1888—B. A. England, labor.....	27 00
June 15, 1888—Emanuel Alvish, labor.....	12 75
June 15, 1888—Geo. H. Tay & Co., machinery.....	50 39

June 15, 1888—George W. Rines, deepening well.....	\$19 00
June 15, 1888—W. T. Garratt & Co., pump.....	5 00
June 15, 1888—J. C. Plummer, sawing wood.....	30 00
July 28, 1888—Pacific Manufacturing Co., lumber.....	283 66
July 28, 1888—G. W. Appleton, gates to driveways.....	85 00
July 28, 1888—Albert Weidemann, wages, labor.....	36 00
July 28, 1888—B. A. England, wages, labor.....	25 00
July 28, 1888—Robert Menzell, plumbing supplies.....	26 40
July 28, 1888—Geo. H. Tay & Co., machinist.....	11 99
July 28, 1888—Morrison & Benham, laying pipes.....	8 69
July 28, 1888—J. J. McDaniels, rebuilding tanks.....	73 95
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	\$17,269 18

SCHEDULE H.

Disbursements Made from Income Fund.

July 9, 1887—Eliza Hamlin, wages.....	\$5 40
July 18, 1887—W. Ladner, wages.....	14 17
August 1, 1887—Roberts & Co., printing.....	7 50
August 1, 1887—M. Sanor, cow.....	45 00
August 1, 1887—M. Rodgers, potatoes.....	2 00
August 13, 1887—Lizzie Dale, wages.....	6 00
August 20, 1887—Annie Butler, wages.....	4 31
September 4, 1887—B. Kanusagar, wages.....	20 00
October 6, 1887—Dr. A. E. Osborne, expense.....	4 60
October 12, 1887—Mary Kane, wages.....	2 55
October 23, 1887—Mrs. Theis, wages.....	17 50
November 1, 1887—Mary Anderson, wages.....	5 42
December 6, 1887—Dr. A. E. Osborne, expense.....	20
December 23, 1887—Mrs. A. Lathrop, expenses.....	69 35
January 3, 1888—William Harney, expenses.....	78 80
January 3, 1888—Mrs. Julia M. Judah, expenses.....	10 40
January 3, 1888—Mrs. Kate Lathrop, expenses.....	21 00
February 7, 1888—Columbus Bartlett, services.....	75 00
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	\$389 20

SCHEDULE I.

Classified Expenditures on Account of Maintenance.

Crockery.....	\$173 38
Clothing.....	71 43
Dry goods.....	758 65
Expense—incidentals.....	484 36
Expressage and freight.....	115 76
Furniture.....	1,697 47
Fuel.....	679 64
Farm.....	266 30
Feed for stock.....	492 72
Fish, etc.....	56 20
Groceries, etc.....	3,087 52
Hardware and tools.....	129 20
Kitchen ware.....	28 80
Light.....	452 40
Labor.....	76 60
Laundry.....	2,432 80
Medicines and attendance.....	558 57
Postage and lockbox in Post Office.....	57 31
Provisions, smoked meats, etc.....	1,431 05
Repairs—general.....	315 30
Shoes, and repairing shoes.....	173 50
Stock.....	290 00
Salaries.....	10,590 67
Stationery.....	256 49
Telegraphing.....	13 50
Traveling expenses (Trustees and Superintendent).....	496 96
Vegetables.....	534 76
Woodenware, brushes, brooms, etc.....	60 25
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	\$25,731 59

SCHEDULE J.

Classified Expenditures on Account of Improvements.

Home buildings—alterations, extensions, and additions.....	\$5,633 24
Water account—wells, tank house, tanks, massage room, and piping.....	3,830 63
Laundry account—building, machines, engine, and equipment.....	3,217 13
Lighting—vault, tank, machinery for gasoline supply, with fixtures in build- ings.....	2,157 00
Farm and grounds—fruit and ornamental trees, grading, laying out grounds and driveway.....	1,536 50
Sewerage—cesspools, drains, and sewers.....	894 68
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	\$17,269 18

SCHEDULE K.

Recapitulation of Receipts and Expenditures for the Thirty-ninth Fiscal Year.

Cash in hands of Treasurer, July 1, 1887.....	\$5 95
Cash in hands of Superintendent, July 1, 1887.....	67 70
Cash in hands of Board of Trustees.....	1,573 95
Warrants and coin from State Controller on account of support and maintenance, as per schedule D.....	25,342 39
Warrants and coin from State Controller on account of improve- ments, as per schedule E.....	17,269 18
Cash for maintenance of children, as per schedule A.....	2,376 00
Cash for sale of stock, etc., as per schedule B.....	422 58
Cash as special payments, as per schedule C.....	725 00
Cash from loan made by the Commercial Savings Bank of San José.....	9,835 14
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	\$57,617 89
To cash paid for support and maintenance, as per schedule F.....	\$25,342 39
To cash paid for support and maintenance, as per schedule H.....	389 20
To cash paid for improvements, as per schedule G.....	17,269 18
To cash paid State Treasurer (see note following schedule N.).....	4,056 98
To cash paid deficiency claims for thirty-eighth fiscal year, as per detail report on file with the State Board of Examiners.....	9,835 14
Balance in hands of Treasurer.....	625 00
Balance in hands of Trustees.....	100 00
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	\$57,617 89

It should be noted that, while the above schedule shows cost of maintenance as \$25,-
342 39, we have paid over to the State \$4,056 98, and really have cost the State \$21,285 41,
net.

SCHEDULE L.

Donations Made in Cash for the Christmas Fund, December 25, 1887.

Mrs. H. M. Jessup.....	\$5 00
Mr. J. Jessup.....	5 00
William T. Wilson.....	10 00
Pacific Manufacturing Company.....	10 00
Mrs. O. Oaks.....	1 00
H. Claussen.....	5 00
Geo. S. Beaver.....	2 50
Henry Meininger.....	5 00
Geo. T. Taylor.....	5 00
Hecht Bros. & Co.....	10 00
W. G. Bowne.....	10 00
Miller & Lux.....	20 00
Ariel Lathrop.....	20 00
Col. William Harney.....	10 00
H. R. Judah.....	5 00
N. Braunsweiler.....	10 00
William J. Curtis.....	5 00
Frank J. Maguire.....	5 00
G. C. Jenkins.....	2 50
Rev. A. L. Kellogg.....	1 00
Thos. Riley.....	1 00

E. H. Davies	\$1 00
Maurice O'Brien	2 00
J. Ruth	1 00
C. H. Worthington	1 00
A. Withrow	50
J. B. O'Brien	5 00
R. Menzell	3 00
John McGrath	2 50
Frank Reding	5 00
Hon. Thos. J. Clunie	10 00
S. Oberdeener	5 00
Mrs. Regina C. Kelsey and friends	20 00
A. Harnus	1 00
Mrs. P. Dougherty	5 00
Professor A. Vandernaillen	2 50
C. Hicks & Co.	5 00
L. V. Garrigus	1 00
W. C. Francke	1 00
Jacob Eberhardt	5 00
Unknown, San Francisco	3 50
E. C. Snyder	3 00
A. Jackson	1 00
Thos. J. Hannon	3 00
Camilo Martin	5 00
John T. Riorden	2 50
Mary McCullock	1 00
Mrs. E. T. Linn	1 00
Ernest Page, by his mother	50
C. P. Polhemus	10 00
David Jacks	5 00
Wm. C. Badeau	2 00
Dr. Gallup	2 00
Dr. Woodams	1 00
Dr. Kingsbury	50
Santa Clara "Journal"	1 00
Father Kenna	5 00
A. Harnus	2 00
Wm. B. V. Weeks	5 00
S. N. Hundley	5 00
Hon. B. D. Murphy and friends	20 00
Mary Gallegar	1 00
Weinstock & Lubin	10 00
Miss Brundage	1 00
Geo. W. Page	5 00
Amounting to	\$320 50

The following expenditures were made from the above fund, vouchers for which are on file:

Postage	\$4 00
Printing—J. A. Nace, \$1; Santa Clara "Journal," \$2 50	3 50
Material for banner, \$6 60; mounting the same, \$5	11 60
Poultry—J. Ruth, \$18 05; A. Fatgo, \$24 35	42 40
Christmas goods for gifts, Davis & Bros.	58 55
Christmas goods for gifts, O. A. Hale & Co.	18 80
Costume for Santa Claus	1 50
Expense to San Francisco and return, Mr. Worrell	5 00
Musical instruments and equipment for brass band, C. S. Eaton	110 85
Subscriptions for year magazines, periodicals, etc., for library, J. Wanamaker	46 40
Subscriptions for year magazines, periodicals, etc., for library, R. Logan	8 00
Purchase for Ernest Page	50
Balance on hand in hands of Treasurer	9 40
	\$320 50

SCHEDULE M.

Donations (other than cash) Made for the Christmas Fund, December 25, 1887.

Bancroft Company	Picture books and blocks.
W. Tyson	Picture books and blocks.
Maurice O'Brien	Sixty pounds mixed candies.
Mrs. Isabel Baldwin	Three boxes clothing, candies, etc.
J. S. Butler	One sack peanuts.
Florence Paul	One half dozen picture scrap books.
Mr. Parker	Two boxes pears.
Nathan Dohrman & Co.	Large box Christmas goods.
Senator Conklin	Box of raisins.
George A. Hamilton	One box of sundries.
Newman, Levison & Co.	Large box toys.
Mrs. P. Thrift and friends	Large box of sundries.
Mr. and Mrs. J. Harris	Box of toys and candies.
Tureman & Judah	One nursery rocking chair.
T. W. Hobson	Four overcoats and four boy's suits clothing.
O. A. Hale & Co.	Large lot worsted and dry goods.
Mr. Sanders	Two boxes raisins.
Levi Strauss & Co.	One hundred pounds candies.
Mrs. Spencer	Box assorted fruit.
Terry & Co.	One dozen framed pictures and chromos.
E. Folks	One box oranges.
W. J. Curtis	One box assorted nuts and oranges.
Miss Von Stratten	Two packages toys.
Mrs. Peterson	Package handkerchiefs and toys.
Mrs. Grace	Package candy, toys, etc.
Farmers Union	Sack of nuts.
F. J. Maguire	Hat, stockings, etc.
Capt. Merrithew	Two boxes nuts and two boxes grapes.
H. Kelly	Lot toys, candies, etc.
Osborn & Alexander	One dozen pair roller skates, one box tools and toys.
Mrs. L. A. Kennedy	Socks and package candies.
Camilo Martin	Package of candies.
Mrs. H. R. Judah	Two coats and bonnets.
Mrs. Kate B. Lathrop	Seventy-five pounds candies.
Mary V. White	Box candy, scent-bag and handkerchief.
Mrs. E. T. Linn	Package Christmas cards, cuffs, buttons, etc.
Mrs. Silvia	Christmas box.
Miss Pardon	Box dolls and sundries.
Mrs. Weidenmuller	Christmas box.
Mrs. Kate B. Lathrop	Thirty yards woolen goods; ten yards chintz; fourteen worsted belts; six yards velvet, and large lot dress trimmings, etc.
Unknown	Package of picture cards.
Mrs. Isabella Baldwin	Lot of toys, trumpets, etc.
Hugh Hamilton	One box cakes and candies and package pictures.
Mrs. Chandler	Dolls and toys.
Joseph A. Hoffman	Christmas cards.
Plum & Co.	One roll carpet cuttings.
Abram Block	Wagon load of fruit.
Mr. Morrell	Two boxes apples and two boxes grapes.

Also a large number of special gifts to our children from their parents and friends.

SCHEDULE N.

Donations Received from July 1, 1887, to June 30, 1888.

July, 1887—Mrs. H. R. Judah, San Mateo, three vests, two coats, and one pair of shoes; Mrs. Ariel Lathrop, San Francisco, box of candy for Fourth of July; Miss Emily W. Peck, Santa Clara, one dress and underclothing; Mr. Woodams, Santa Clara, two boxes of peaches; Mr. H. Hamilton, Oakland, eight loaves of bread, small cakes, and one dozen rusks; Dr. A. E. Osborne, Santa Clara, one map of California for the office.

August, 1887—Mr. Abram Block, Santa Clara, one half dozen squabs, one load of apricots, one load of pears, one load of pears, peaches, and nectarines, two loads of fruit (assorted); and two large boxes of plums; Col. William Harney, Menlo Park, one load of apricots; Mr. Geo. Beaver, Santa Clara, one box assorted fruit and two boxes peaches; Mr. J. H. Woodams, Santa Clara, two boxes apricots, one box peaches, and one box apples; J. P. Pierce, Santa Clara, one load (thirteen boxes) pears; Mrs. Ariel Lathrop, San Francisco, two dolls, one dozen rubber dolls, two tea sets, one nightshirt, and picture cards; Mrs. Geo. T. Taylor, San Francisco, clothes and shoes for nursery.

September, 1887—Mr. Abram Block, Santa Clara, six squabs, two boxes peaches, large quantity of pears, and also of quinces; Mr. John Widney, Santa Clara, fifty pounds of grapes for jelly; Mrs. H. R. Judah, San Mateo, tea set for children's camp; Mrs. Rev. Dr. Bentley, Oakland, two bags of white sand (for sand class) from the coast; Mr. J. P. Pierce, Santa Clara, two-horse loads of pears; Mrs. McMillan, Santa Clara, one box of grapes; Mr. J. H. Woodams, Santa Clara, one box of apples and one box of pears; Mr. J. S. Fowler, Alma, two boxes of grapes and five gallons of cider.

October, 1887—Mr. Abram Block, Santa Clara, a large quantity each of apples, pears, plums, and quinces, also eight squabs; Mr. William Doxie, San Francisco, "Scribner's Magazines," one half dozen children's magazines, story books, and picture cards; Mr. Geo. Beaver, Santa Clara, two boxes of pears; Mrs. Ariel Lathrop, San Francisco, portraits (with frames) of Governors Stoneman and Bartlett, box of candies; Mr. McCann, San Francisco, large bundle of (London) illustrated papers; Mrs. H. M. Jessup, San Francisco, portrait (with frame) of Governor Waterman; Mr. H. Hamilton, Oakland, box of bread, cakes, and rolls.

November, 1887—Mrs. H. R. Judah, San Mateo, toys for the asylum; Mrs. Ariel Lathrop, San Francisco, cushion for parlor sofa, fancy basket, one box (sixty-five pounds) candy; Mr. Abram Block, Santa Clara, load of grapes, pears, and apples, five squabs; Mrs. B. V. Weeks, Pescadero, ten yards woolen goods for dresses; Col. Wm. Harney, Menlo Park, one box grapes; Mr. John Widney, Santa Clara, two boxes and one basket of grapes; Mr. George Beaver, Santa Clara, one box of grapes and one bundle of clothing; Judge Myrick, Santa Clara, one bundle of clothing.

January, 1888—Mr. William Doxie, San Francisco, one package picture cards and thirteen calendars for 1888; Mrs. E. A. Yard, Santa Clara, one thousand grape cuttings.

February, 1888—Messrs. Hobson Bros., San José, thirteen vests; Mr. Abram Block, Santa Clara, twelve squabs and a quantity of apples; Mrs. H. R. Judah, San Mateo, wool hat and trimming; Unknown, Santa Clara, lot of toys and pictures.

March, 1888—Professor Hilgard, University of the Pacific, eight plants of strawberry tree; Mr. Abram Block, Santa Clara, eight squabs.

April, 1888—Mrs. Ariel Lathrop, San Francisco, rocking chair for Maggie Brown; Mr. John Widney, Santa Clara, flower seeds; Mrs. Gonzales, San Francisco, bundle of clothing; Mrs. P. Thrift, Santa Cruz, dahlia bulbs and chrysanthemums; Women's Christian Union, Santa Clara, cut flowers; Mrs. Hicks, Santa Clara, coat and pants; a friend, Santa Clara, twenty-four neckties for boys.

June, 1888—Mr. and Mrs. H. R. Judah, San Mateo, \$5 in coin for Fourth of July; Legion of Honor, Santa Clara, one largerigged ship and package sunday school papers; Mr. Abram Block, Santa Clara, two boxes apples, eight squabs, and live pigeons as pets for the girls; Mr. E. E. Goodrich, Quito Olive and Vine Farm, a quantity of fresh fruit and fifteen gallons olive oil for medical uses; Mr. John Widney, Santa Clara, two boxes pears, cut flowers, seeds, and plants.

Agreeably to the State Controller's construction of the law and his rulings, I have paid over to the State Treasurer all moneys received from the sale of products or material, and from parents and others for the maintenance, care, and training of inmates, with the exception of those disbursements exhibited under head of Schedule H, and which were duly authorized by the Controller upon our request, and the presentation of financial complications necessitating such use of said fund. I have duly filed with the Controller monthly reports covering these receipts (known as "Income Fund"), and have on file in my office his receipts for the money. The total amount so paid over to the State Treasurer for the year is \$4,056 98, while up to date of writing (October 1, 1888) the amount of \$4,501 73 has been so paid over, and \$447 remains on hand. I would respectfully recommend that your honorable body urge in your report to the Governor that the Legislature enact such provision or provisions as may enable your Board to retain all such receipts and create thereout of a special fund, to be used for such purposes of school extension, supply, or equipment as in your wisdom shall be deemed best; or, if thought proper, the fund can be applied to hospital purposes, or any other purpose specially demanding it. By filing monthly with the Controller a certified statement of the condition of this fund, receipts to it and disbursements from it, that officer can still retain a perfect knowledge of our transactions; the same will harmonize with the work of his office, and the money will be applied within the lines of use for which it is paid, which is not exactly and directly the case at

present, inasmuch as it is turned over to the State Treasurer and becomes a part of the General Fund, against which we have neither credit nor ability to draw.

I now invite your attention to some considerations of our departments in detail.

SCHOOL DEPARTMENT.

The work here has been steadily and earnestly pursued and with, I am glad to say, most flattering results. As will be seen by reference to Table 5, a rather comprehensive curriculum has been established whereby children are classified according to ability, with studies arranged according to grade, individual aptitude, and special fitness.

Each child has been *tempted* along rather than *driven*, and induced to strengthen its intellectual strides with each succeeding occupation, rather than wearying itself with monotonous drill. So far as the same has been practical and advisable, the studies have been of half hour sessions daily, and alternate with play in the school yard, or some other form of relaxation. The variety of our instruction and diversity given to all our exercises has proved to be both pleasing and strengthening to the enfeebled minds, as well as conducive of permanent beneficial results.

No one who has taken the pains to critically inspect either our schools or our exhibit of school work can longer doubt of the utility of educating this class. Neither can any one question the feasibility of instructing, training, or schooling imbeciles in the higher arts and lines of study, and he must be indeed callous to demonstration and blind to established fact who would dare assert longer that our work in any of these particulars is an experiment. It is through and by the school room, properly equipped, carefully managed, and rationally set with work, that we must hope for the greatest ultimate good for these children. It must be considered, as it is, in fact, the chief factor of all the lines applicable to the reformation of the feeble-minded child. If the school training that a strong child receives is of the benefit and importance to it that the attention and expense bestowed upon our public and private schools would indicate, how very important must be the special forms of schools designed particularly for the weak.

From personal observation, we are convinced that, while the ornamental and esthetic should not be lost sight of, the chief attention should be given to those practicals which carry a sensible every day significance with them.

The needs which appear to be specially pressing in this department are, *first*, new and more extensive school quarters. These can be secured by setting apart a portion of the first story of the new permanent administration building, which I trust the coming Legislature will cause to be erected. Or a separate school building may be erected at some convenient distance from the boys and girls' buildings; this latter plan is, for many reasons, to be preferred. The allowance to cover this need should be ample enough to fully equip for at least two hundred children, and to warrant us engaging the additional teachers required for that number. I feel that our teachers now have more children under their care than they should have for the most successful and efficient results. With nearly all of our children the most exacting attentions from the teachers are required, while with quite all, personal drill in some form is indispensable.

Each child, in all the vagaries of its mental and physical defects, is a study in itself. He who would successfully teach must first successfully understand the child to be taught. A perfect knowledge of its transient moods, its foibles and temper, can come only after personal study and direct examination. Many of our classes demand that there shall be direct personal instruction, and this is not possible for every one in a class of fifteen to twenty to receive in a half hour session. We need, even for the number now in school, one or two additional teachers.

HOSPITAL DEPARTMENT.

A merciful Providence has kept us in comparative good health, and saved us from ravaging epidemic and contagion.

Crowded together as the children have been in the dormitories, it is a matter of surprise that we have escaped even the usual diseases incident to childhood. With the exception of the deaths mentioned, which in three cases were more of a surgical than a medical aspect, and barring a few cases of colds and coughs, and the usual disturbances of the alimentary tract peculiar to these children—with these exceptions we have been in absolute health. It is true we have been ever vigilant in our enforcement of the strictest cleanliness of person and quarters. We have endeavored to keep our drains and sewers flushed and clean, and we have carefully watched every avenue through which disease might enter; and to all this I feel some credit must be given, and yet we realize that there comes a time in the history of every institution when epidemics appear and sweep through the wards, despite the vigilance of officers. All unbidden and unseen, and hence all the more to be dreaded, the deadly germ lurks in the air, and at last enters, an unwelcome guest, to strike its innocent victims. Considering the physical stamina of the grade of children we have to deal with, many of whom have hereditary taints and diatheses that are ever ready to break out in more malignant forms, it behooves us to provide and prepare for emergencies. Forms of ophthalmia, erysipelas, and bowel troubles are all common diseases of crowded quarters. They are also communicable, and call for isolation in their treatment. When we mention the danger from having to retain for treatment a case of diphtheria or scarlet fever, or even measles or whooping-cough, in the wards alongside of children not affected, further comment seems unnecessary. The inferior, weakened vitalities of these children call for the tenderest care in all their illnesses, and in the permanent enlargement of our institution buildings provision should be made for ample hospital service.

In this connection, I would suggest that suitable provisions be made in connection therewith to accommodate the epileptic and paralytic cases. All these latter classes need constant, particular, and special medical attention. This I am forced to admit cannot be given them while they mingle with the other children. There is no class for which I feel a deeper sympathy and a tenderer regard and pity than for the epileptic. That we should receive epileptics, that they are entitled to admission to institutions for the feeble-minded does not admit of argument. On the other hand, if there is one class for which special effort should be made to reclaim, they are that class. The epileptic imbecile or idiot is positively the most piteous object I know. Through the whole range of human misfortunes I know of nothing that can equal in abject wretchedness the lot of the

neglected and confirmed epileptic whose intellectual light is being continually diminished in painful seizures, and whose physical existence is being daily, perhaps hourly, sapped and blighted by the disease-fiend whose clutch is on the wretched victim. The insidious character of its inception and the tenacity of its hold; the subtle character of its progress, and the thousand deceiving phases of its treatment; and lastly the horrible consequences of its unchecked ravages, render epilepsy a disease of unusual importance. As a concomitant of idiocy and insanity, it behooves us as specialists to provide specially for the treatment, study, and, if possible, the amelioration, if not the cure, of this dread disease.

That a very large percentage of epileptic cases can be checked, and many permanently cured, I have no doubt, provided the proper means be secured for their rational treatment; that it is useless to try to secure the high standard of success under our old regime, without their isolation and the positive benefits of hospital treatment, I am equally positive. I am informed that in the asylums and other places in this State for the retention of the insane, a large class of epileptics exist, many of whom are children, and less insane than feeble-minded. It seems proper that there should be somewhere in our State a special hospital for the care of these children, where, under the best hygienic conditions, they may receive the benefits of special treatment, and have a fighting chance, at least, for recovery. They are certainly not proper subjects for the insane wards, unless actually past the exercise of their reasoning faculties. Without the fear of having my words misconstrued or my motives impugned, I feel I can safely say that so long as so many epileptic children apply for admission to our Home; so long as they are all in some stage—from slight to grave—of feeble-mindedness; so long as we are compelled by every sense of right and justice to receive them and treat them, why not have this ideal hospital here and make this department of our institution a greater factor for good than it might otherwise be?

Through my office window, as I write, I can rest my eye upon the glistening dome of that notable structure dedicated to science, which rests in quiet splendor like a mighty gem upon the brow of grand Mount Hamilton. Within it is poised that unique and matchless instrument, whose mighty sweep is designed to pierce the very depths of the heavens and bring to the scientist's eye the heretofore unrevealed records of pre-Adamite times. Upon my ear there breaks the despairing shriek of an epileptic girl, who, frantic from the terrors of the aura, rushes toward her playmate to seize her, but reels and falls, with clenched fists and foaming lips, prostrate to the ground. And I feel as though that despairing shriek should be heard around and through the entire extent of our State, until a similar munificence to that of Lick should build another temple to science, but dedicated to the study of the poor epileptic; and within whose walls there should be found somewhere in its armamentarium the means of exploring the hidden secrets of the mind and brain, that at last man might ravel out the tangled thread of disease and become master of the secret even to the cure.

That in an institution of this kind separate buildings should be provided for epileptics, every medical superintendent in the United States will testify. For once, we find something upon which doctors can, will, and do agree. Dr. F. M. Powell, Superintendent of the Iowa

Institution for Feeble-Minded Youth, says: "It is not only advisable for their own welfare that they should have separate wards, but that of those with whom they are associated. The influence of a paroxysm on their more timid associates is harmful. The usual phenomenon of an epileptic fit is a sight from which the strongest naturally shrink." [Report for 1885, page 15.]

Dr. Geo. Knight, Superintendent of the Connecticut Institution for the Feeble-Minded, says, in his paper on "The State's Duty to Epileptics:" "In tracing the history of imbecile children I have found that epilepsy existed in itself, or as a complication, in over 60 per cent of the cases examined. So fully have I been convinced that epilepsy is one of the most active factors in the result we call imbecility, that I took steps to ascertain whether my experience had been shared by my associates. Taking the statistics of one institution alone, that of Dr. Kerlins, of Pennsylvania, I find corroboration of my belief in the fact that, in the examination made by him of the histories of three hundred imbecile children between the ages of five and sixteen, sixty-six were found to be epileptics. One hundred and fifty-six had, in their antecedents, the history of the epileptoid family of diseases, but were not epileptic at the time of the examination, leaving but seventy-eight of the whole number examined uncomplicated with epileptic disease, or only 26 per cent. In 16 per cent epilepsy existed either in the parent or grandparent.

"Hitherto, in the majority of our institutions for the training of imbeciles, it has been impossible to give the epileptic that attention and special treatment which should in every case compel to the utmost the best result. The care of the epileptic is the slowest, the most painful, and the most discouraging of all the work that comes under the head of care for the feeble-minded. Our work being new, and the pressure of the needs of the brighter class (who would receive the most immediate benefit) very great, and there existing a necessity of giving to a skeptical public the reasons for the faith that was in us, all these circumstances have conspired to compel us to give the work among epileptics a less important place than justice and humanity demanded. But notwithstanding all these drawbacks, a few of our institutions have been fortunate in being able to make a beginning. The results have more than justified our belief in what the future will grant us, if we can secure for the epileptic that which we have already secured for the feeble-minded, viz.: time, place, and opportunity." Dr. Knight found that out of two hundred and two cases under special treatment, in six institutions—

107, or 53 per cent, were improved.

93, or 46 per cent, were not improved.

52, or 26 per cent, had no spasms for one year.

35, or 17½ per cent, had no spasms for two years.

23, or 11½ per cent, had no spasms for three years.

17, or 8½ per cent, had no spasms for four years.

And from four institutions came the answer, on inquiry, of 8½ per cent cured. Contrast this with the author's experience at the Epileptic Hospital on Randall's Island, New York, where they reported *no cures* but an improvement in 90 per cent, and one is ready to accept his conclusions that isolated, detached hospitals for the care of this class is not what is needed most. After stating the well known fact that the influence of the association of epileptics with higher grade imbeciles is injurious, the author concludes, that while "we cannot

do good hospital work in the school rooms, with good results to either side," the best plan would be to establish "homes for the epileptic in connection with the several institutions which care for the feeble-minded, where, immediately upon sufficient improvement of any case, all the benefits of school room and workshop training could be placed within his reach."

I have quoted at length from Dr. Knight, because his words seem to aptly fit our condition of affairs in California, and his views coinciding so perfectly with my own judgment, I have felt that I could not add to the value of his touching appeal for this class of defectives. Such a hospital, or infirmary department, should be ornate, commodious, and convenient to the other buildings of the institution. It should be provided with sunny rooms and baths, and a commissary of its own, whereby special dietaries may be scientifically carried out. It should also have its own school room, and be, to all intents, a composite institution of and within itself.

Then, as patients improve physically, it would be possible to promote them to association with the higher training-school grades as indicated. Thus we would establish a strong moral conscious force within the child to control itself, and personally aid, by its will-power, the healthy stimulus otherwise afforded in the checking of the disease.

THE ASYLUM DEPARTMENT.

We need also separate accommodations for the class of defectives who come under this heading. I find that the Nineteenth General Assembly of the State of Iowa enacted (Section 12) that, "The term feeble-minded shall be so construed as to include idiotic children, and the institution shall provide a custodial department for the care of such children as cannot be benefited by educational training." It is this idea and sentiment with and among the people of our own State, although unexpressed by statutory definition, that has compelled us to accept idiotic children until our inadequate accommodations for them are overcrowded. It is this same sentiment that sends in almost daily applications that cannot be accepted for want of accommodation. Really, these cases are the ones for whom relief is most needy and pressing. So far as my knowledge and experience goes, idiotic children are to be found in all the asylums and almshouses of this State, where they exist as a detriment to the legitimate working of the respective institutions on account of being a class for whom those institutions were not designed. In the insane asylums they take the space that should be given to the insane. With the adequate accommodations here for the proper care of male and female idiots, we could relieve the asylums of a class I imagine they would be better without, thus affording partial relief at least to their overcrowded condition. Besides, we will be enabled by our trained and experienced help to do that which cannot now be done under their present surroundings, viz.: train and benefit them in their personal habits, if not in other respects.

During the past year most gratifying results have been obtained from our medical treatment of the low grades. This treatment has consisted of thorough bathings, special forms of dieting, the use of dry frictional applications, massage, and thorough inunctions of sweet oil. Through the kind thoughtfulness and generosity of Mr. E. E. Gooderich, proprietor of the Quito Olive and Vine Farm, who has

donated large quantities of pure olive oil from time to time for this purpose, I have been enabled to pursue this treatment with considerable thoroughness. I am convinced of the efficacy of olive oil thus used. In some instances the most marked benefits have been derived, while with all a higher standard of vitality has been secured. What has been done, however, is only a few foundation stones for the more elaborate treatment which I hope to inaugurate hereafter under more favorable conditions, which I trust the generosity of the State will grant us. These conditions should and will, I confidently believe, embrace a substantial building at present suitable for the proper custodial care of one hundred children—fifty of each sex—supplied with its own kitchen, baths, treatment wards, and dormitories. This building, like that of the hospital or epileptic building referred to, should be contiguous to the main buildings of the Home, yet sufficiently separated from them to insure the privacy such cases, for decency's sake and other reasons, demands and the nature of the work indicates.

INDUSTRIAL DEPARTMENT.

I claim for this department, now virtually in embryo, an equal interest with that of our training school department. It is here where practical results are quickest found, most easily demonstrated, and most profoundly impressed upon the public. Holding to the idea as a dominant factor, that the State is bound by all the laws of mercy to provide for this class of defectives, I still claim that each child (within the proper grade) can and should be trained to some useful, practical handiwork whereby it may be rendered not only in a measure self-supporting, but shall contribute to the pleasure, the comfort, or the support, or all three, of the others in the Home. The pleasantest, easiest occupation can be made the most monotonous drudgery by mismanagement; on the other hand the most tedious and enacting labor can be made sweet and refreshing by a cunning manipulation of its elements. Especially with these children is work, or occupation, if that term be preferred, an element of rest. The restlessness, the worry, the crying under restraint, the fevered imaginings, and the often exhibited uncontrollable outbursts of temper, are generally so many expressions of the fundamental human impulse *to do something*. This being the case, how plain becomes our implied duty to direct these impulses into channels of practical use and benefit.

The best definition for work that I know is the old Websterian one of "effort directed to an end." In this light, our kindergarten games, occupations, and pastimes—all efforts directed to an end—become a valuable line of work to our children. All our efforts in this department have been based upon the principle that each step, however trivial at first, shall lead up to more positive knowledge after awhile; that each little occupation, simple and indirect as it may at first appear, shall be the initiative into methods more complex, and that each line of training taken up shall in some wise bear a direct relation to the wants of the child and his special form of defection. On the principle that the end justifies the means, we feel that the State should provide liberally for the manual training of the feeble-minded. No one will doubt the wisdom of putting these children to work, and only those who are ignorant of the pathology of idiocy and imbecility, and uninformed as to what can be done and

has been done with them in other States, can differ with us or find fault with the kind of work to which they are applied.

The most valuable form of industrial work for the feeble-minded begins in the kindergarten, as modified by our teachers, who of necessity must draw largely upon their own inventive skill. In this adaptation of it it has proved of great benefit in all our beginnings. Following it to those qualified to take them up are the higher branches of simple art and decorative work, sewing, etc. Repoussé is not only a splendid drill in ornamental work, but it has also a commercial value, and in its more perfect execution drills the hand to steady symmetrical efforts, the eye to form, size, color, and general relief, and the brain to a truer conception of the lines of beauty and the relations of cause and effect. Music may also in its instrumental application be considered a form of industrial training. The skillful handling of the violin, the fingering of the keys of the clarinet, piano, or horn, in fact the proper use of any of the band or orchestral instruments, presupposes considerable drill of certain muscles to regular rythmical movements, which must of necessity correspond with and respond to a like systematic action of the mental forces. Thus both the physical and the psychical are at the same time invigorated, and permanently developed. These lead up to the grosser forms of work, such as tailoring, shoemaking, broom making, mattress making, carpentering and wood carving, and work upon the farm and grounds. But feeble-minded children cannot train themselves in these departments of labor. And they would not if they could any more than bright children. Experienced and capable teachers are required to supervise, direct, and attend to almost every move they make. It is as necessary to have competent trade teachers as it is to have competent school teachers, and out of many chosen few will be found qualified in all particulars.

It would appear that in a climate such as ours, with such fertile soil, and every natural requirement granted, the first and most beneficial forms of industrial training would be those of agriculture and horticulture, especially the care of vines and small fruit. It would at least have a certain practical flavor about it that would be relished by many before its utility.

I am often greatly amused at the absurd and ridiculously humorous questions that are often asked regarding the possibilities of the children's work; also, the gratuitous advice and opinions offered us. Our unenlightened friends fail utterly to realize the fact that if our children could work without teachers to instruct them and watch them; if they could prune, and plow, and dig, and sow, as ranchmen must; if they were competent to be left alone or in company with others of their grade, to do an average day's work with average success; that if they were able to do all, or any one of these things, that they would not be here, and there would be no need of such institutions as ours. It is because of the inability of parents and others to train them or even endure their presence in the family circle, that such Homes as ours have been established. When we teach a child to pick up a pin, who never picked up a pin before, or have taught a child habits of personal cleanliness who always before was soiled, we feel that we have accomplished something that no one else in all the world did with it, and, although the result gained has been very small and insignificant contrasted to our own standard of enlightenment

and culture, yet it is something prodigious compared to the former darkness and inaction from which the poor child was rescued.

Just so with industrial training. It is no longer a question, Shall we put these children to work, or are they capable of work. The busy shoe shops, mattress shops, bakeries, sewing rooms, and many other trade schools, turning out really creditable work at a profit in the larger institutions east of us, have settled for all time that question. When it comes to a discussion as to what form of labor is most practical or most to be preferred, we believe the whole matter should be left to the decision and discretion of those whose lives are devoted to this work and passed among the children, and who not only know personally each child's peculiarities and abilities, but who also have access to the accumulated experience of the past in these very lines. During the past year children have helped in all our departments, while regular details have been directed to certain special purposes. We need, however, to have established additional work shops, equipped with proper tools, for the extension of this idea.

I would respectfully recommend an enlargement of the sewing department and the equipment of it with a suitable number of sewing machines, where regular tailoring, dressmaking, and mending for the Home can be taught as a trade. Also, a shoe shop—which need not at present be extensive—where a few boys may be instructed in repairing and in making coarse shoes for some of the inmates. Also, extensions to our present carpenter shop, where chairs, furniture, etc., can be repaired by the boys under the instruction of one of our mechanics. The erection of a new kitchen and dining rooms, suitable for the increased demand of our population, will give employment also to a few other children to advantage. The laundry erected and equipped since last report has furnished a large class of girls with pleasing work, while a couple of boys have shown creditable progress in the washing room in their assistance there given. As to the outdoor work, I think there is no question as to the value of extending it to the lines I have mentioned. The few that have worked out during the past summer have met the expectations of everybody except the pessimists.

An abundance of vegetables has been raised and cared for—proving a source of pleasure and healthfulness to our children. To bring this work up to its fullest capabilities requires the employment of a competent foreman. I mean by the word competent, not alone an experienced or successful farmer or orchardist, but a man of good address and pleasing, patient manners, possessing the aforesaid qualifications, and who is also able and willing to instruct the children under his charge. I am sorry to say that all competent ranchers would not be competent foremen for us. We not only need, but must have positively the safest man to be procured for this position—one who will recognize and be guided by the moral responsibilities that rest upon him.

OUR SABBATH EXERCISES.

Our Sabbath devotional exercises have been both interesting and instructive. In the afternoon, at three o'clock, the entire school assemble for an hour's devotion, which has been made as non-sectarian as possible. Twice each month the services are led by clergymen of the town, who appear on the first and third Sabbaths respectively; on other Sabbaths services are led either by the teachers or myself.

The form of service has been made simple, yet direct, so that it may, in a measure, at least, come within the rational comprehension of the weakest among our family. It consists of singing children's and gospel hymns, prayer, short sermons on scriptural topics, the distribution of papers, cards, etc., and closing with the recitation of the Lord's prayer in concert.

The work by Miss Proseus for the year past has been mainly confined to New Testament explanations; and that by Miss Peck and the Superintendent to the beautiful and child-interesting Bible stories from the Old Testament. Through the kindness of President Kenna, of the Santa Clara College, to whom I am indebted for many other official and personal courtesies, our children belonging to the Roman Catholic Church are called for each Sabbath morning in time for second service, and driven to church and back in the college coach, accompanied always, of course, by some one of our officers.

I desire to here testify to the kind attention paid to our exercises by Rev. J. M. Newell, pastor of the Presbyterian Church, and Rev. Dr. Briggs, pastor of the Methodist Church, both of whom have regularly taken part in the same, and who, by their eloquent and appropriate assistance, have raised our Sunday-school to its present excellence.

For frequent and very pleasant visits to care for the spiritual needs of our Catholic children, I am also indebted to Rev. Fathers Bixio and Raggio, of the Santa Clara College, both of whom have been most conscientious and untiring in their service upon these children.

RESUMÉ OF OUR NEEDS FOR THE COMING YEAR.

I estimate that our needs for the coming year will be as follows:

First—A main administration building, of permanent structure (not wooden), provided with the necessary offices, fireproof vault for records, and capable of comfortably housing one hundred and fifty children of the high grade, or training school class. This building should be planned and situated so that further extensions to it can be made as demands warrant, without destroying or interfering with its architectural or administrative plan or convenience.

I recommend that it be built of brick, of two full stories, with basement, heated with steam and supplied with storage tanks for at least fifty thousand gallons of water.

In the basement story could be placed workshops, recreation and assembly room, for both sexes, storerooms, etc. On the first floor could be the offices, the school rooms, and the chapel or audience hall. On the second floor, bed rooms for officers and dormitories for the children. I estimate the cost for such a building, complete, as I have in mind, to be about \$50,000, including fixtures.

Second—An infirmary or hospital building, capacity one hundred and thirty beds, one hundred of which should be for epileptic, as suggested in the body of this report. This building should be of one story and basement, and may be of wood, preferably, of brick, heated with steam, and supplied with water storage for at least thirty thousand gallons. The basement part can be utilized for cooking, heating, and storage of supplies; the main floor for dormitories, officers quarters, and rooms for special forms of treatment, baths, etc., and extending from it in the form of a wing (which may be shut off entirely from the other part) a ward large enough for thirty beds, to be used

for contagious disease, etc. I estimate that this complete, including fixtures, will cost about \$35,000.

Third—An asylum building, capacity one hundred beds, fifty for each sex. This also should be one story only, with basement for storage, etc., as in the former cases, and should be I think of brick. It will also need to be heated by steam and supplied with at least fifty thousand gallons water storage. The cost for such a building as I have in mind, I estimate will be about \$25,000.

Fourth—The erection of a bakery, kitchen, and dining-room, at some central point, but detached from other buildings. This may be of frame, provided with a second story for rooms for help, and will cost probably \$5,000.

Fifth—For sewer connections with Santa Clara main and collecting mains on Home grounds, also completion of local systems, \$5,000.

Sixth—For landscape-gardening, and general ornamentation of grounds, planting of trees, labor, etc., \$1,000.

Seventh—For fencing, farm expenditures, and stable additions, \$1,000.

Eighth—For maintenance, estimated on an average of one hundred and twenty-five children for six months, \$16,875; two hundred children for one year, \$54,000; and two hundred and fifty children for the remaining six months of the forty-second fiscal year, \$33,750. Total, \$104,625.

All of which is respectfully submitted.

A. E. OSBORNE,
Superintendent.

EIGHTEENTH REPORT

OF THE

BOARD OF DIRECTORS AND OFFICERS

Of the California Institution for the Education of the

DEAF AND DUMB, AND THE BLIND,

FOR THE

Twenty-four Months ending June 30, 1888.



SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.
1888.

BOARD OF DIRECTORS.

W. C. BARTLETT, President	Oakland.
GEORGE E. WHITNEY, Vice-President.....	Oakland.
THEODORE A. LORD, Auditor	San Francisco.
J. K. McLEAN.....	Oakland.
J. W. COLEMAN.....	Oakland.
W. L. PRATHER.....	Secretary and Treasurer.

OFFICERS OF THE INSTITUTION.

PRINCIPAL.

WARRING WILKINSON, M. A.

TEACHERS OF THE DEAF AND DUMB.

GEORGE B. GOODALL, M.A.,	FRANK O'DONNELL,
C. S. PERRY, M.A.,	THEOPHILUS d'ESTRELLA,
THEODORE GRADY, B.L.,	HENRY FRANK,
MISS M. A. DUTCH,	MISS DAISY A. NOURSE.

TEACHERS OF ARTICULATION.

N. F. WHIPPLE,	MISS LIZZIE MOFFAT.
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TEACHER OF DRAWING.

THEOPHILUS d'ESTRELLA.

TEACHERS OF THE BLIND.

CHAS. S. WILKINSON,	MISS ROSE SEDGWICK.
---------------------	---------------------

TEACHER OF MUSIC.

GEORGE B. GOODALL.

I. E. NICHOLSON, M.D.	Physician.
DOUGLAS KEITH.....	Clerk.
L. W. FLENNIKEN	Supervisor.

MATRONS.

MISS M. J. WISEMAN,	MISS J. OSGOOD,
MRS. A. F. MUNROE.	

C. JENSEN.....	Foreman Carpenter Shop.
E. R. CARROLL.....	Foreman Printing Office.
FRED. HANSEN.....	Enginee .

REPORT.

OFFICE OF THE CALIFORNIA INSTITUTION FOR THE
EDUCATION OF THE DEAF AND DUMB, AND THE BLIND, }
BERKELEY, October —, 1888. }

To his Excellency R. W. WATERMAN, Governor:

SIR: The Directors of the Institution of the Deaf and Dumb and Blind herewith respectfully submit their reports concerning the trust which has been committed to them. The period covered by this report is two years, ending June 30, 1888. During that time two hundred and seven pupils have been under instruction, and forty-six have graduated from the Institution. At the close of the period mentioned there were on the rolls one hundred and fifty-three pupils, and at the date of this report the number has increased to one hundred and sixty-five. The rapidly increasing population of the State confirms the opinion that the number of pupils seeking the benefits of this Institution will soon be greater than can be accommodated, unless further provision is made in their behalf.

The receipts from State appropriations for the two years ending June 30, 1888, were	\$91,525 00
Received from the Principal	3,226 98
Total receipts	<u>\$94,751 98</u>
Total disbursements	\$93,275 31

For a detailed statement of expenditures, reference is made to the Principal's report, herewith submitted, and also to the same for a more particular statement of the appropriations needed for the efficient conduct of the institution for the next two years.

The appropriation of \$30,000, made by the last Legislature, for the completion of the main edifice, has not been available, on account of the enhanced price of labor and material. By the terms of the appropriation, the Directors were not authorized to begin the work if it could not be carried to completion with the money in hand. They ask for an additional sum of \$15,000, to secure this much needed improvement. Had the main edifice been completed by the addition of another story, as had been anticipated, there would still be need of further room in the girl's department, now taxed to its utmost capacity. Deserving applicants ought not to be turned away from the institution for lack of room. The system, as originally devised, provided for a group of buildings, the single edifices to be supplied to meet the exigencies as they might occur in the future. To meet one of these exigencies, it has become necessary to provide an additional edifice for a girl's home, for which the sum of \$50,000 will be needed.

One of the most pressing wants of this Institution is an adequate supply of pure water. The supply for present and future wants ought to be increased by at least ten thousand gallons a day. It is believed

that water-bearing strata can be found on the premises that would yield this additional amount. But the Directors have not had the means to secure such a supply. They therefore ask for an appropriation of \$10,000, to be expended for the purpose, as on further investigation shall be deemed best, in order to meet this prime necessity of the Institution.

During the last two years a number of substantial improvements have been made on the premises, chief of which is the construction of a large and convenient dairy barn, with substantial brick walls and cement floor. With the small fund of \$1,000 in hand, available for the construction of a propagating house, the foundation for the same has been laid and the work advanced towards completion. The amount of labor contributed by the pupils of the Institution, under the guidance of the Principal, will bring the cost of these two structures far below what it would have been if only contract labor had been employed. The grounds of the Institution have been kept in perfect order, the several edifices have been maintained in good repair by a small expenditure, and the supervision of the Principal has been wise, efficient and productive of the most satisfactory results.

Respectfully submitted.

WM. C. BARTLETT, President.

REPORT OF THE PRINCIPAL.

To the Board of Directors of the California Institution for the Deaf and Dumb, and the Blind:

GENTLEMEN: I have the honor herewith to submit the biennial report and papers which give in detail the history and operations of this school during the two years ending June 30, 1888:

NUMBER OF PUPILS.

The movement of pupils has been as follows:
On the rolls June 30, 1886:

<i>Deaf and Dumb.</i>		
Boys	78	
Girls	53	
		131
<i>Blind.</i>		
Boys	14	
Girls	11	
		25
Total both classes		156

The admissions since the same date have been—

<i>Deaf and Dumb.</i>		
Boys	26	
Girls	12	
		38
<i>Blind.</i>		
Boys	7	
Girls	6	
		13
Total under instruction		207

There have been graduated and discharged during the two years—

<i>Deaf and Dumb.</i>		
Boys	27	
Girls	19	
		46
<i>Blind.</i>		
Boys	6	
Girls	2	
		8
Total deductions		54
On rolls June 30, 1888		153
Admitted since opening of term		16
Discharged since opening of term		4
On rolls at date		165

HEALTH.

The usual degree of health has prevailed among the pupils during the past two years. An epidemic of measles broke out in January, 1888, and continued until the material for the disease was exhausted. About forty cases were reported, but nearly all were of a mild type and only two gave any anxiety. The most serious effect of the epidemic was felt in the schools, where the interruption of study continued for over a month, and thus interfered with the work of the classes.

But while death and serious disease have spared the children, they have made unusual inroads upon the officers and employes of the Institution. On the twenty-seventh day of November, 1886, Mr. E. P. Pike, who had been in the service of the Institution as foreman of the carpenter shop for eight years, was stricken with apoplexy while at work, and died amid the implements of his trade, and in the room where he had labored so long and so efficiently.

On the thirtieth of December of the same year, Miss Kate A. Crandall, a faithful conscientious teacher, obtained, what has been called the greatest prize of life, "an early death." She was taken with an attack of rheumatism the day after school closed for the Christmas holidays, and, being advised to go to Byron Springs for relief, died at that health resort within three days after her arrival. Miss Crandall was a young woman of many and rare virtues; loyal to friendship, faithful in service as her strength would allow, devout in thought and character, her four years' work in the class-room had been of value to herself as well as to the Institution, in providing the stimulus and environment for developing the latent powers of a singularly beautiful life. Her death was a severe blow to her friends and associates, who had come to appreciate her worth by daily observation of its genuineness.

Before the shadow of this untimely death had lifted, the household was called to mourn the loss of another friend and associate, Mrs. Harriet B. Willard, who for sixteen years had been the chief matron of the Institution, and who, during all that time, had exhibited a Christian zeal and self-sacrifice in the discharge of her onerous duties, as rare as these virtues are commendable, and it is only justice to the memory of a good woman to transcribe from the records of the Board, the following tribute to her worth:

The Directors of the California Institution for the Deaf and Dumb, and the Blind, desire to put upon record their high appreciation of the character and services of the late Mrs. Harriet B. Willard, who, for sixteen years, fulfilled the responsible duties of Matron, and their keen sense of the loss which they, in common with the officers and pupils, have suffered by the death of this most exemplary woman. Mrs. Willard was, in the largest sense of the word, a mother to the children under her charge. Her daily life was a sermon, with love and duty for its text. In sickness, a tender and devoted nurse; in health, a wise counselor and friend; everywhere a fine type of Christian womanhood, she has left as a heritage to those who were associated with her the memory of a thousand gentle deeds, and the example, in a subordinate sphere, of high and noble living.

Attest:

W. L. PRATHER, Secretary.

To the vacancies caused by the deaths above mentioned, the following appointments have been made: Mr. C. Jensen, foreman of the cabinet shop; Mr. Theodore Grady as teacher, and Mrs. Munroe as Matron of the Girls' Home. Mrs. Munroe had had some experience as matron of the blind boys during Miss Sharr's leave of absence, and so was not new to the duties of her office. Mr. Grady is a graduate

of the institution of the University of California, and has had, in addition, the advantage of a year spent at the Johns Hopkins University, and thus brings to his work, not only a knowledge of the methods under which he himself was taught, but the broader culture which comes from contact with the world of letters.

There have been several other changes in the personnel of the Institution since my last report. Miss Martha Day, who taught most acceptably in the blind department for three years, resigned in the fall of 1887, and Miss Rose Sedgwick was appointed to fill the vacancy. Mr. Douglas Tilden also severed, the same year, a connection with the Institution which has continued, as pupil and teacher, for twenty-one years. In April, 1888, Mr. W. E. Zander, who for eight years had been clerk and steward, tendered his resignation, having accepted the position of manager of the new Hotel San Rafael, at San Rafael, and finally, at the close of the academic year, Miss Anna B. Carter terminated a most faithful and devoted service of eight years to take a position in the Pennsylvania Institution for the Deaf and Dumb, at Philadelphia.

It is not to be supposed that the loss of so many and so valuable assistants, within a period less than two years, can be without effect in the administration of an institution like this, made up as it is, of many and varied departments; but the Board has been fortunate in securing for the vacancies those who come with good equipment for the special work to be done. Mr. N. F. Whipple, who had conducted a private school for the deaf at Mystic, Connecticut, was appointed as teacher of articulation. Mr. Charles S. Perry, formerly of the Ohio Institution, where, as teacher and principal, he had done good service for many years, accepted an offer to resume the profession which his reestablished health enabled him to take up again. Miss Daisy Nourse was put in charge of the newly arranged kindergarten: Mr. Lewis Flenniken, who had experience in the Ohio and western Pennsylvania schools, was made supervisor of the boys, and after the resignation of Mr. Zander, was given the care of the store-room, thus relieving the new clerk, Mr. E. Douglas Keith, of duties which interfered very seriously with efficient office work. All these changes and readjustments have been made without friction and without impairment of efficiency.

SCHOOLS.

During the two years under review the work of the class-rooms has been commendable, and the progress of the pupils all that could reasonably be expected. The teachers have been faithful and zealous, the pupils have been, with a few exceptions, studious and docile. The graduates who have left the Institution are generally competent to "paddle their own canoe," and will doubtless make as good citizens as those who have larger reach and broader fields of opportunity. But little change has been made in the course of study, the principal effort now being to carry into practice the schedule formulated some years ago. It is not difficult to lay out a plan of educational development, but it is very difficult to always carry one's plan into effect. There are many reasons, which every teacher of the deaf and dumb will understand, why a fixed and rigid system will not do in a school of this kind. I am not much of a believer in the Procrustean bed theory anyhow or where, but with the deaf and dumb it is more than

usually impracticable. In his case, instead of the boy being chopped off or stretched out to fit the bed, the bed must be chopped off or lengthened to fit the boy. Every pupil is a special study—a problem in and of himself. There is no master-key that unlocks one and all. No two have the same wards, and thus it comes about that the best teacher is he who knows how to adapt himself to the *individuals* of his class, and to develop the latent possibilities of each in his own way and in the direction of his aptitudes. In very large schools for the deaf, where the pupils number four or five hundred, classifications may be made which not only simplify the labor of the teacher, but increase its efficiency. Perhaps our smaller number, and its consequent difficulties in grading, may and does find some compensation in the independent and self-reliant work that is obtained of the pupils.

The most interesting feature in the blind department, during the past two years, has been the increased use of the type-writer, and the valuable results obtained thereby. Free access to these mechanical instruments would reduce the labor of the teacher, eliminate to a great extent such studies as spelling and grammar, stimulate the pupils to literary efforts, besides affording them relief from the many weary hours that hang so heavily upon those who sit in physical darkness. In addition to the help which the type-writer affords as a school appliance, there is reason to believe that it may become a means of livelihood to the many blind who are facile in its use. Correspondence, and writing from dictation, especially, offer broad and profitable fields of industry for those who have talent and manual dexterity. If the phonograph ever justifies what Mr. Edison says of it, I foresee a new and available means of self support for the blind in connection with the type-writer. In view of the importance in the education of the blind of this instrument, I recommend that an appropriation of \$500 be asked for of the coming Legislature, for the purchase of type-writers.

ARTICULATION AND MECHANIC ARTS.

It will be remembered that, in the last report, it was strongly urged that provision should be made for increasing the efficiency of the articulation department and the schools of fine and mechanic arts. The Legislature inserted items of \$4,000 and \$2,000 in the General Appropriation Bill for these purposes, but, under misapprehension of the facts and the needs of these departments, Governor Bartlett, by virtue of his constitutional prerogative, struck these two items from the bill, and thus left the Board without the necessary means of extending and developing the Institution work in these directions.

I can add very little to what was said in the seventeenth report concerning the importance of these departments. Articulation and lip-reading are acknowledged to be legitimate branches of a deaf mute's education, and no school for the deaf is complete that does not offer facilities for the acquiring of speech. At present we have one teacher, when there ought to be three at least, to give the experimental and persistent testing necessary before one has a right to say of a pupil, "It is of no use." With our limited force only about thirty pupils can be instructed, which allows to each only ten minutes a day. It is quite evident that no satisfactory work can be done in such a limited time. To put this department on a proper footing will

require two more teachers and an appropriation of \$4,000 for the two years, and I respectfully recommend to the Board to urge such appropriation at the coming session of the Legislature.

The mechanic and art departments are of still more importance. I am not of those who think that the only aim and purpose of an education is to get a living by it, but a living is necessary, and in these days of sharp competition and shifting adjustments of one's personal relations to society, he stands the best chance of winning who has the best equipment of cultured brain and skillful hand. While this is true, of those who have the full complement of faculties belonging to the normal individual, the handicap of deafness or blindness makes it incumbent upon the Board to see that no element of success is lacking to those for whom this Institution was founded and is maintained. The blind should have every facility for cultivating whatever musical ability they may have, in order to fit them for teaching—while piano-tuning, type-writing, and such other employments as call for mental acuteness rather than manual dexterity, should be made part of their educational training. The deaf are facile in everything requiring a quick eye and dexterous fingers. Drawing, painting, modeling, carving, engraving, are among the branches of fine art in which the deaf mute may and often does excel. Of the mechanic arts, none are beyond his reach, and it is only a question of advantage as to which he shall turn his hand to. Up to the present time, there has not been much choice of handicraft offered in this Institution. Wood-working and printing shops have been established, and the results have justified the selection. The boys in both departments have made marked progress, and the cabinet work done at their hands would not discredit journeymen.

But the equipment of the shop is not what it should be, nor are the appliances of the Art School sufficient in number or quality. It is therefore recommended that an appropriation of \$1,500 a year be asked of the Legislature for the two coming fiscal years, to be expended in developing the Art and Mechanic Schools of the Institution.

In my last report I recommended to the Board that provision should be made for the sending abroad, for purposes of art study, promising graduates of this Institution who give evidence of more than usual ability. In accordance with this suggestion, the Directors loaned out of the proceeds of the Durham Fund the sum of \$500 a year, afterwards increased to \$600 for three years, to aid Mr. Douglas Tilden in pursuing his art studies in New York and Paris.

In September, 1887, Mr. Tilden went to New York and entered the National Academy of Design, at which excellent school he remained till May of the current year, when he sailed for Paris, where he now is, working with characteristic zeal and enthusiasm. His teachers in New York, in letters addressed to me, speak in the highest terms of commendation and hope concerning the earnestness and future of this young man, and it is believed that the aid thus extended will yield an abundant return, not only in helping to open a career for Mr. Tilden, but in the stimulus it gives others who may come after him. It may not be amiss, in this connection, to say that there are ten deaf mute exhibitors in the Paris Salon this year, and one of them took a third-class medal.

EDUCATIONAL BUILDING.

The last Legislature made an appropriation of \$30,000 for completing the educational building. It was supposed that this sum would suffice to do the work, but the extraordinary rise in the price of material and labor, a rise due largely to the great immigration to California, created an unusual demand for lumber, brick, and skilled mechanics, so that when the bids were opened in response to advertisements, the lowest offer was found to be \$41,938. As this sum was far beyond the appropriation, there was nothing to be done but await further action on the part of the Legislature. It is earnestly hoped that such action will be taken with as little delay as possible. The present accommodations of the school building are insufficient for our needs. One class has already been thrust off in the shop at an inconvenient distance for proper supervision and discipline. The Girls' Home is so crowded that no more female pupils can be received save as vacancies occur, and an additional Home for the girls must be erected at once; but, by utilizing part of the school building for dormitories as provided for in the plans accepted by the Board, the necessity of a new Home for the boys may be postponed for a time. The sum required for completing the school house, in addition to the appropriation already made, is \$15,000.

WATER SUPPLY.

The old problem of adequate water supply still confronts us and begins to look discouraging. We have about ten thousand gallons from the spring, two thousand gallons from the two tunnels, and perhaps three thousand gallons from the well, a total of something more than fifteen thousand gallons a day, leaving a deficit of from five thousand to ten thousand gallons.

If the water of the Alameda Water Company was abundant and good the Institution might purchase the needed supply, but neither of these conditions exist. The company has little water and what there is is not pure. In this strait I can suggest but two hopeful remedies—either to continue the tunnels or attempt an artesian well. It is believed by many, that a well, bored deep enough, would secure an abundant supply of water. Many also think that the State could well afford to try the experiment here in Berkeley, where it has two important public institutions, of exploring the strata lying beneath, whether they contain water, gas, oil, or coal. An experienced Pennsylvania oil-well borer has expressed the opinion that one of these essentials would be found by going deep enough. If the attempt is made, it should not be abandoned till a depth of not less than one thousand five hundred feet has been reached. If the Legislature can be induced to appropriate \$10,000 for this purpose, I believe the water question would be solved for all time. There is a possibility, also, of obtaining gas in the same boring. The results obtained at Stockton through deep wells, and in other parts of the State, certainly justify the Legislature in expending a reasonable sum for this work.

There is urgent need of a new boiler to supply the steam for the two engines now in use, and the cooking apparatus, which it is hoped the Legislature will provide for. The present boiler is small, and has been in constant use for eight years. It might serve as a relief or hot water boiler, but it is not safe to put on it the high tension of steam

necessary to drive the shop engine two hundred feet distant. The time has also come when it is economy to put in the kitchen a steam stock boiler and one or two kettles for the proper cooking of vegetables. I have received from the Union Iron Works an estimate of the cost of putting in a new boiler, resetting the old one, and making pipe connections with the kitchen, all amounting to \$1,925. I believe that \$2,000 will do the work and purchase also the cooking apparatus. I therefore respectfully urge that an appropriation of \$2,000 be asked for, to be expended in making this improvement.

The painting of the buildings should be continued. The shop, the kitchen, and one of the Homes have been done out of the appropriation of two years ago. There remains to be done the Girls' Home and the second Boys' Home. One thousand dollars is needed for this purpose.

It is gratifying to be able to report that the income for the support of the Institution, during the last two years, has been sufficient, and that there is no deficiency to provide for. The expenditures, in detail, are shown in the Principal's dissections, and amount to \$93,275 31. The financial statement, in brief, is as follows:

RECEIPTS.

Received from State appropriation.....	\$91,525 00
Received from Principal.....	3,226 98
Total receipts	<u>\$94,751 98</u>

DISBURSEMENTS.

For salaries and wages.....	\$45,649 77
For groceries and provisions	17,995 78
For clothing	1,074 33
For furniture	2,152 16
For building and repairs	2,943 99
For fuel and light.....	8,335 42
For laundry.....	2,439 53
For stable and dairy	5,183 53
For miscellaneous expenses	4,289 12
For industrial department	2,211 68
For salary of Secretary and Treasurer.....	<u>1,000 00</u>

Total disbursements, for ordinary current expenses, for two years ending June 30, 1888.....	<u>\$93,275 31</u>
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This favorable showing, in spite of the high cost of meats, coal, hay, and certain lines of groceries and provisions, justifies me in the belief that no increase will be needed in the appropriation for the next two years. The wants of the Institution for the coming two years may be briefly stated:

For current support of the Institution, per annum.....	\$45,750 00
For increased facilities for articulation department, per annum	2,000 00
For increased facilities in industrial department, per annum	1,500 00
For additional appropriation for completing school building	15,000 00
For painting buildings	1,000 00
For new boiler and steam cooking apparatus and connections	2,000 00
For an additional Girls' Home	50,000 00
For purchase of type-writers	<u>500 00</u>

It is earnestly hoped that the Legislature will provide for all these needs. The increase of the population of the State is unprecedented, and it is likely to grow for a number of years to come, as the resources and attractions of our soil and climate become better known. I am in continual receipt of letters from parents, asking what provision

California makes for her deaf and blind. The man who thinks of his deaf or blind child before he will move to a State, is apt to make a good citizen. Even if provision is made at once for the Girl's Home, it will be the fall of 1890 before it can be available for occupation, and, in the meantime, children must grow up in ignorance, and sorrowing parents must stand in helpless grief before an affliction they know not how to alleviate.

During the month of December, 1887, the Institution was visited by the Rev. Fred. H. Wines, now, and for twenty years past, the Secretary of the Illinois Board of Charities, and also editor of the "International Record of Charities and Corrections." Mr. Wines came to California by invitation of an association of earnest men and women who are interested in bringing about concerted action, by which State, municipal, and private charity may be most wisely distributed, and in considering how the important governmental functions of punishment for crime may be so administered as to diminish law breaking and law-breakers. While here Mr. Wines took occasion to inspect the State institutions, and to make himself familiar with their details, and afterwards published the opinions he formed in his editorial correspondence. Referring to this school, after saying some kind things of the executive officer, Mr. Wines writes:

To-day has been given to a visit to the deaf and dumb at Berkeley. * * * The school is in its way a gem, probably the most perfect in respect of its general arrangements and the admirable balance of all its parts, that I have ever seen. * * * This Institution is organized on the cottage plan. The number of pupils is one hundred and sixty, and they are divided into ten classes, not including the class in articulation. In the highest class I found the pupils studying Latin, and I learned that six have entered the University. I met a Mr. Grady here, a deaf mute, who spent one year at the Johns Hopkins University in Baltimore. These instances illustrate the fact that the deaf and dumb are capable of pursuing their studies, if encouraged to do so, in company of those who can both hear and speak—a fact not generally recognized.

The buildings comprise a school house, two dormitories for boys, two for girls, a kitchen and dining-room, a laundry, a stable, workshops, and a private residence for the Principal. These all are separate from each other, which, in my opinion, is as it should be. The amount of land is one hundred and thirty acres. Many of the details of the building are worthy of special notice. A peculiarity in the construction of some of the roofs struck my eye; the two slopes do not meet at the top, but there is a corrugated iron ridge above, and the space is left open for the passage of air. Instead of iron fire escapes, such as are commonly seen, stone towers at the ends of the dormitories inclose circular stairways of stone, by which, in case of necessity, the pupils may pass out of the building on the upper floors and reach the ground in safety. The Girl's Dormitory is divided off into alcoves by wooden partitions, which do not reach to the ceiling, so that each girl has a private sleeping apartment, while all of them are in the same room. The dining-room presents an elegant appearance; it is finished in white cedar, and has an elevated, ornamented roof; the windows are round-headed and have stained glass. The kitchen is lofty and handsome, with a tiled floor and a tiled dado. There is no necessity for a scullery, since dishes can be washed the year round on a porch outside, and no need for a refrigerator, because, in this climate, meats can be kept without ice. I was shown the room devoted to a cooking school, where a beautiful pictorial effect has been obtained by the selection of handsome colored china and its æsthetic arrangement on the dresser. Beneath the dining-room is a gymnasium, with \$500 worth of Sargent's apparatus. All of the buildings are rat-proof. There are no sewer connections and no inside water closet pipes; these are all outside the buildings. From the front windows and from the portico of the school building one looks over the bay through the Golden Gate, upon the broad Pacific Ocean. It is one of the finest views in California.

The commendatory notice of the Institution here quoted derives its chief value from the man who wrote it. Mr. Wines is not a novice in matters of this kind. Half of his life has been spent in critical examination of public institutions, and no one is better qualified to judge of the merits of a plan and its details than he. It will be gratifying, therefore, to the people of California, who have been always so liberal to this school, to know that the money appropriated to its use has not been unwisely expended.

ACKNOWLEDGMENTS.

The Southern Pacific Railroad Company has continued to grant many favors to the pupils of this Institution, which it would be ingratitude not to acknowledge. For all their little excursions to picnics and annual visits to the Mechanics' Fair, free transportation has been courteously extended, while the children of parents who were too poor to pay the fares to and from home, have been "passed" back and forth. Many a child in this Institution may well say of Mr. A. N. Towne, the General Manager, in the words of Little Jo, "He was good to me, he was."

The favor of half fares granted by the Pacific Coast Navigation Company to the pupils who live at the coast towns is also gratefully acknowledged.

The thanks of the officers and pupils are also due to the Directors of the Mechanics' Institute for invitations to the fair held at the Pavilion in San Francisco, which gave them an opportunity to see something of the great industrial development of the State.

In closing this report I desire to acknowledge the cordial coöperation the Board has extended to me in all my labors, and to bear testimony to their unselfish endeavors to advance the interests of the Institution.

Respectfully submitted.

W. WILKINSON, Principal.

BERKELEY, October 1, 1888.

ADDENDUM.

The following papers have been sent to the Institution for the use of the pupils, and for which thanks are hereby tendered: Alta California; Sacramento Weekly Bee; Los Angeles Censor; Deaf-Mute Journal, New York; Vis-a-vis, Columbus, Ohio; Goodson Gazette, Staunton, Virginia; Deaf-Mute Advance, Jacksonville, Illinois; Deaf-Mute Hawkeye, Council Bluffs, Iowa; Deaf-Mute Mirror, Flint, Michigan; Mute Journal, Omaha, Nebraska; Deaf-Mute Optic, Little Rock, Arkansas; Mutes' Companion, Faribault, Minnesota; Deaf-Mute Times, Delevan, Wisconsin; Kansas Star, Olathe, Kansas; Daily Paper For Our Little Ones, Rochester, New York; Our Little People, Philadelphia, Pennsylvania; Texas Ranger, Austin, Texas; Deaf-Mute Record, Fulton, Missouri; Silent Observer, Nashville, Tennessee; Deaf-Mute Voice, Jackson, Mississippi; Deaf-Mute Bulletin, Frederick City, Maryland; Register, Rome, New York; Tablet, Romney, West Virginia; Kentucky Deaf-Mute, Danville, Kentucky; Auralist, Chicago, Illinois.

PRINCIPAL'S DISSECTIONS OF EXPENDITURES FOR TWENTY-FOUR
MONTHS, ENDING JUNE 30, 1888.

GENERAL FUND.

Groceries and Provisions.

Allspice, 15 pounds.....	\$1 70
Ammonia, 36 quarts.....	7 05
Bacon, 298½ pounds.....	36 31
Bath brick, 2 dozen.....	2 40
Baking powder, 120 pounds.....	52 93
Beans, 3,045 pounds.....	77 56
Breakfast gem, 450 pounds.....	18 00
Buckwheat, 420 pounds.....	18 60
Butter, fresh, 7,293½ pounds.....	2,360 78
Butter, pickled, 2,402 pounds.....	486 48
Canned goods, 351 dozen.....	557 85
Capers, 3 dozen.....	4 90
Carb. soda, 31 pounds.....	2 76
Cheese, 1,318½ pounds.....	163 75
Chicory, 150 pounds.....	10 38
Chocolate, 99 pounds.....	26 91
Cinnamon, 70 pounds.....	19 35
Citron, 48 pounds.....	13 44
Cloves, 10 pounds.....	2 65
Cocoonut, 31 pounds.....	9 73
Coffee, 3,655 pounds.....	544 59
Cooking wine and brandy.....	32 00
Corn starch, 370 pounds.....	30 50
Cornmeal, 800 pounds.....	19 05
Crackers, soda, 2,590 pounds.....	142 59
Crackers, mixed, 121 pounds.....	15 52
Cracked wheat, 775 pounds.....	19 15
Cranberries, 1 barrel.....	9 00
Cream of tartar, 46 pounds.....	18 16
Crushed indian, 370 pounds.....	31 45
Currants, 675 pounds.....	51 88
Curry, 3 bottles.....	2 40
Eggs, 2,068½ dozen.....	606 32
Extracts, 45 pints.....	32 15
Farina, 281 pounds.....	13 30
Fish, fresh.....	182 14
Fish, salt.....	210 00
Flour, white, 365 barrels.....	1,528 83
Flour, graham, 10 barrels.....	41 00
Fruit, dried, 3,640 pounds.....	246 08
Fruit, fresh.....	448 27
Gelatine, 8 dozen.....	11 40
Ginger, 45 pounds.....	7 80
Ham, 1,283½ pounds.....	184 24
Hominy, 737 pounds.....	25 31
Hops, 21 pounds.....	6 90
Honey, 194 pounds.....	15 63
Horseradish, 5½ dozen.....	9 00
Lard, 1,670 pounds.....	161 50
Macaroni, 1,116 pounds.....	87 93
Mace, 18 pounds.....	11 76
Malt, 15 pounds.....	75
Meat, 77,944 pounds.....	5,298 51
Molasses, 86½ gallons.....	18 21
Mustard, 90 pounds.....	14 83
Nutmeg, 5 pounds.....	2 75
Oatmeal, 800 pounds.....	29 88
Olive oil, 24 dozen.....	113 38
Pearl barley, 175 pounds.....	7 60
Pepper, 98 pounds.....	21 32
Peas, dried, 179 pounds.....	4 92
Peas, split, 305 pounds.....	11 71
Pickles.....	31 10
Potatoes, 66,640 pounds.....	925 98
Poultry.....	161 43
Raisins, 400 pounds.....	34 00
Rice, 1,800 pounds.....	91 26
Rolled oats, 580 pounds.....	24 90

Sago, 90 pounds	\$4 92
Saleratus, 66 pounds	6 18
Sal soda, 1,244 pounds	21 94
Salt, coarse, 2,265 pounds	11 92
Salt, table, 4,900 pounds	33 75
Saltpeter, 15 pounds	2 33
Sapolio, 34 pounds	29 33
Sauce, Worcestershire, 5 dozen	15 50
Silicon, 6 dozen	5 55
Smoked beef, 1,379 pounds	173 32
Soap, brown, 7,975 pounds	340 11
Soap, castile, 894 pounds	113 18
Soap, toilet	15 96
Sugar, brown, 12,129 pounds	711 80
Sugar, cube, 874 pounds	65 06
Sugar, crushed, 1,043 pounds	74 40
Sugar, granulated, 5,999 pounds	374 25
Sugar, powdered, 630 pounds	47 67
Syrup, 549½ gallons	180 71
Tagliarini	90
Tapioca, 70 pounds	4 02
Tea, 711 pounds	237 00
Thyme, sage, etc.	3 53
Vegetables	48 83
Vermicelli, 263 pounds	18 71
Vinegar, 220½ gallons	39 15
Yeast	3 85

Salaries and Wages.

Principal and teachers	\$26,025 90
Physician, clerk, and matrons	8,175 00
Servants and services	10,728 87
Gardener	720 00
Treasurer	1,000 00

\$46,649 77*Clothing.*

Boots and shoes, 130 pairs	\$219 14
Buttons	8 25
Clothes brushes and shoe brushes	17 30
Collars, paper	50
Combs	6 55
Corsets	3 15
Dress goods	126 73
Dressmaking	16 00
Hair brushes	9 00
Handkerchiefs	75
Hats	26 75
Hose	9 95
Nail and tooth brushes	7 05
Pants	17 25
Pins and needles	22 57
Repairing shoes	204 70
Repairing hair clippers	75
Shoe laces	4 65
Silesia, 8 yards	1 35
Suits clothes, 30	284 25
Suspenders	3 50
Shoe blacking, 24 dozen	16 20
Thread, linen and cotton	45 31
Trimmings	1 93
Tie	25
Underwear	20 50

\$1,074 33*Furniture.*

Baskets	\$3 00
Bedsteads, 20	135 00
Bedticking	43 55
Blankets, 25 pair	100 00
Brooms, 15½ dozen	59 35
Calico	30 22
Carpets and lining	14 71

Carpet cleaning	\$34 82
Chairs	60 00
Clocks and repairing	76 12
Crockery, glassware, and cutlery	199 12
Curtains and curtain goods	92 45
Dust pans	3 75
Dust and floor brushes	47 49
Feathers, 112 pounds	57 95
Feather dusters	16 56
Hair for mattresses	47 19
Kitchen utensils	79 02
Looking glasses	26 25
Matting and mats	83 90
Mattresses and repairing	118 50
Mop cloths, 19 dozen	36 75
Mop and brush handles	6 75
Napkins	27 60
Napkin rings, 10 dozen	12 00
Pails, wood	9 60
Paper bags	1 56
Picture frames	8 95
Preserve jars and cans	2 40
Pedestal	30 00
Quilts	36 00
Range repairs	44 20
Repairing furniture and upholstering	62 57
Sewing machine and repairs	31 75
Scrubbing brushes	66 89
Settees, 12	48 00
Sponge	1 50
Sheeting, 728 yards	135 31
Stools	4 50
Stove polish	1 25
String	9 79
Tablecloths	31 28
Towels	33 50
Tinware and repairs	166 33
Whisk brooms	5 80
Wooden bowls and plates	3 30
Window shades	5 63

 \$2,152 16
Building and Repairs.

Bricks	\$10 00
Cement, 35 barrels	124 00
Engine	385 00
Engine repairs	7 25
Glass and putty	51 86
Gravel, 25 loads	50 00
Hardware	617 66
Lime, 36 barrels	56 25
Lumber	1,092 49
Packing for engine	16 09
Painting	155 50
Paint, oils, and brushes	62 43
Plaster	4 00
Plumbing supplies	267 66
Repairing roofs	8 00
Sand, 10 loads	23 00
Sewer pipe	12 80

 \$2,943 99
Fuel and Light.

Candles, 680 pounds	\$76 60
Charcoal, 12 sacks	4 90
Coal, Sydney, 75 tons 700 pounds	727 87
Coal, Wellington, 274 tons 760 pounds	3,049 33
Coal oil, 300 gallons	79 40
Cotton waste, 100 pounds	13 00
Gasoline, 9,133 gallons	1,916 32
Gas and lamp chimneys, 2 gross	18 00
Gas mixer	213 09
Gasoline, freight on	271 40
Machine oil, 45 gallons	40 50

Matches, 25 gross	\$11 40
Repairing gas fixtures	43 00
Repairing engine	7 20
Screenings, 1 ton 380 pounds	11 11
Wages of engineer	1,775 40
Wicks and tapers	50
Wood and coke	76 40
	<hr/>
	\$8,335 42

Laundry.

Baskets, 10	\$20 55
Blue, 24 pounds	6 00
Brushes, 3 dozen	3 00
Clothespins and lines	3 95
Freight on mangle	54 30
Irons	3 95
Pan for ironing furnace	5 00
Potash, 160 pounds	24 00
Repairing machine	19 00
Sal soda, 2,591 pounds	36 00
Soda, caustic, 240 pounds	22 95
Soap, brown, 400 pounds	18 00
Soap, powdered, 6,680 pounds	439 80
Starch, 864 pounds	73 80
Wages	1,698 58
Wax, 20 pounds	8 25
	<hr/>
	\$2,439 53

Stable and Dairy.

Barley, 12,253 pounds	\$132 79
Bran, 66,391 pounds	551 10
Brooms	3 00
Castor oil, axle grease, etc.	5 90
Chamois skins	4 68
Corn, 120 pounds	1 86
Currycombs and brushes	2 32
Cutting hay	17 00
Farm implements	64 53
Harness and repairs	45 45
Hay, 129 tons 416 pounds	1,381 87
Horse medicine	50
Horseshoeing and clipping	127 75
Horses, 1 pair	400 00
Middlings, 20,816 pounds	209 59
Oats, 13,608 pounds	220 46
Oil cake, 10,319 pounds	161 03
Pigs	23 40
Repairing buggies	249 65
Straw, 90 bales	72 60
Veterinary expenses	29 70
Wages	1,475 00
Wheat, 140 pounds	2 10
Whips	1 25
	<hr/>
	\$5,183 53

Miscellaneous.

Advertising	\$75 60
Blacksmithing	79 30
Books, stationery, etc.	602 21
Cartage	2 00
Christmas expenses	85 14
Collection charges	190 50
Drugs, medicines, etc.	234 30
Diplomas, filling in	1 75
Directories	13 00
Electric supplies	30
Expenses clerk to city	11 85
Expense of pupils to picnics, parties, etc.	23 35
Expense of pupils to oculist	3 00
Express charges	273 25
Exchange on drafts	1 95
Freight on supplies	105 23
Ice	50 02
Lye for trees	6 98

Music for the blind.....	\$30 44
Powder, fuse, etc.....	9 10
Printing.....	21 00
Piano.....	870 00
Repairing and tuning pianos.....	117 00
Rent of telephones and service.....	266 40
Reception to convention delegates.....	52 25
Stamps and postage.....	154 75
Seeds and plants.....	53 03
Subscription to deaf and dumb annals.....	53 60
Subscription to newspapers.....	21 84
Subscription to magazine for blind.....	21 00
Spectacles.....	7 00
Sewing machine repairs.....	1 75
Traveling expenses.....	97 35
Tank.....	45 00
Telegrams.....	34 02
Type-writer repairs.....	15 61
Water, 1,577,220 gallons.....	630 30
Wrapping and toilet paper.....	27 95

\$4,289 12

Industrial Department.

Tools.....	\$2 50
Wages foreman carpenter's shop.....	1,663 50
General printing supplies.....	6 00
Paper.....	26 20
Repairs printing machine.....	2 00
Staples.....	5 00
Type.....	18 98
Wages foreman printers' shop.....	487 50

\$2,211 68

SPECIAL APPROPRIATIONS.

Improvement of Grounds.

Labor.....	\$604 00
Sand and gravel.....	36 50
Cement.....	114 00
Lumber.....	39 36
Mapping.....	45 00
Pipe.....	15 20

\$854 06

Building and Repairing Fence Fund.

West Berkeley Lumber Yard.....	\$24 49
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Water Supply Fund.

Labor boring tunnel.....	\$1,496 81
Digging well.....	218 75
Candles.....	53 40
Powder.....	40 20
Lumber.....	179 50
Blacksmithing.....	60 29
Bricks.....	100 00
Pipe.....	171 00
Tank.....	325 00
Windmill.....	170 00

\$2,814 95

Illustrative School Apparatus Fund.

Books.....	\$23 28
Stereopticon, etc.....	500 45
Points, slates, and styles.....	54 60
Type-writers.....	162 39
	<hr/>
	\$740 72 <hr/>

Building Barn and Stable Fund.

Advertising	\$6 00
Thomas A. Day, on account contract	1,800 00
Thomas A. Day, on account contract	2,394 00
Architects	190 45
Bricks	571 95

\$4,962 40
Laundry Machinery Fund.

One brass washer	\$625 00
One steam mangle	375 00

\$1,000 00
Gymnasium Fund.

Lumber	\$38 99
Apparatus	197 97

\$236 96
Conservatory Fund.

Lumber	\$145 90
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Educational Building Fund.

Advertising	\$71 70
Plans and specifications	750 00

\$821 70

TREASURER'S STATEMENT.

GENERAL STATEMENT.

Receipts and Disbursements for the Two Years Ending June 30, 1888.

	Thirty-eighth Fiscal Year.	Thirty-ninth Fiscal Year.	Total.
<i>Receipts.</i>			
Balance cash on hand last report, July 1, 1886.			\$3,157 74
From State appropriation for support	\$45,775 00	\$45,750 00	91,525 00
From miscellaneous receipts	1,580 70	1,646 28	3,226 98
From State appropriation, improvement of grounds	854 06		854 06
From State appropriation for building and repairing fences	24 49		24 49
From State appropriation for water supply	2,814 95		2,814 95
From State appropriation for illustrative apparatus	740 72		740 72
From State appropriation, new barn and stable	4,962 40		4,962 40
From State appropriation for laundry machinery	1,000 00		1,000 00
From State appropriation for fitting up gymnasium	236 96		236 96
From State appropriation for conservatory building		145 90	145 90
From State appropriation for educational building		821 70	821 70
From State appropriation for painting buildings		1,362 87	1,362 87
Total receipts	\$57,989 28	\$49,726 75	\$110,873 77
<i>Disbursements.</i>			
For salaries and wages	\$25,521 95	\$27,174 60	\$52,696 55
For supplies	20,442 84	19,055 02	39,497 86
For Treasurer's salary	500 00	500 00	1,000 00
For interest on advances	80 90		80 90
For improvement of grounds	854 06		854 06
For building and repairing fences	24 49		24 49
For increase of water supply	2,814 95		2,814 95
For illustrative school apparatus	740 72		740 72
For new barn and stable	4,962 40		4,962 40
For laundry machinery	1,000 00		1,000 00
For fitting up gymnasium	236 96		236 96
For conservatory building		145 90	145 90
For educational building		821 70	821 70
For painting buildings		1,362 87	1,362 87
	\$57,179 27	\$49,060 09	\$106,239 36
Balance cash on hand			4,634 41
			\$110,873 77

DETAILED STATEMENT.

GENERAL FUND.

Receipts.

Balance cash on hand last report.....	\$3,157 74
From State appropriation for support for two years.....	91,525 00
From Principal (miscellaneous receipts).....	3,226 98
Total receipts	\$97,909 72

Disbursements.

For salaries and wages.....	\$52,696 55
For supplies.....	39,497 86
For Treasurer's salary.....	1,000 00
For interest on advances.....	80 90
Balance cash on hand.....	4,634 41
Total disbursements.....	\$97,909 72

SPECIAL APPROPRIATIONS.

From appropriation for improvement of grounds	\$854 06
Paid for labor and material, as per vouchers.....	854 06

BUILDING AND REPAIRING FENCE FUND.

Paid for labor and material, as per vouchers.....	\$24 49
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WATER SUPPLY FUND.

From State appropriation.....	\$2,814 95
Paid for labor and material, as per vouchers.....	2,814 95

ILLUSTRATIVE SCHOOL APPARATUS FUND.

From State appropriation.....	\$740 72
Paid for labor and material, as per vouchers	740 72

NEW BARN AND STABLE FUND.

From State appropriation.....	\$4,962 40
Paid for labor and materials, as per vouchers	4,962 40

LAUNDRY MACHINERY FUND.

From State appropriation.....	\$1,000 00
Paid for labor and machinery, as per vouchers	1,000 00

GYMNASIUM FUND.

From State appropriation.....	\$236 96
Paid for labor and materials, as per vouchers	236 96

CONSERVATORY BUILDING FUND.

From State appropriation.....	\$1,000 00
Paid for labor and materials	145 90

Balance in State Treasury.....	\$854 10
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EDUCATIONAL BUILDING FUND.

State appropriation.....	\$30,000 00
Paid for advertising, plans, and specifications	821 70

Balance in State Treasury.....	\$29,178 30
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TRUST FUNDS.

Durham Fund—Receipts:	
Cash on hand last report—July 1, 1886.....	\$5,483 40
From interest and dividends.....	4,180 37
From proceeds of mortgage note	10,000 00
Total.....	\$19,663 77

Disbursements—For Durham scholarships.....	\$606 25	
For sundries, as per vouchers	427 15	
Loan to Douglas Tilden	500 00	
To Louis Straus Fund (proportion of interest)	900 00	
Balance cash on hand.....	17,230 37	
		<u>\$19,663 77</u>

LIBRARY FUND—RECEIPTS.

Cash on hand last report—July 1, 1886.....	\$1,468 36
From dividends	73 17
Total	<u>\$1,541 53</u>

Disbursements—For books, as per vouchers.....	\$162 90
Balance cash on hand	1,378 63
	<u>\$1,541 53</u>

LOUIS STRAUS FUND—RECEIPTS.

Cash on hand last report—July 1, 1886.....	\$1,260 35
From dividends	31 12
From Durham Fund (proportion of interest).....	900 00
Total	<u>\$2,191 47</u>

Disbursements—To Theodore Grady	\$600 00
To stenographer, as per voucher	238 95
Balance cash on hand.....	1,352 52
	<u>\$2,191 47</u>

ORGAN FUND—RECEIPTS.

Cash on hand at last report—July 1, 1886	\$1,457 47
From dividends	74 80
Total	<u>\$1,532 27</u>
Balance cash on hand	<u>\$1,532 27</u>
	<u>\$1,532 27</u>

CASH BALANCES.

General Fund—Cash on deposit in Union Savings Bank.....	<u>\$4,634 41</u>
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Trust Funds.

Durham Fund—Cash on deposit in Union Savings Bank	\$17,230 37
Library Fund—Cash on deposit in Union Savings Bank.....	1,378 63
Louis Straus Fund—Cash on deposit in Union Savings Bank.....	1,352 52
Organ Fund—Cash on deposit in Union Savings Bank.....	1,532 27
Total	<u>\$21,493 79</u>

Statement of Trust Funds.

Loaned on real estate securities.....	\$31,000 00
Loaned Theodore Grady.....	600 00
Loaned Douglas Tilden.....	500 00
Cash on hand.....	21,493 79
Total	<u>\$53,593 79</u>

Mortgage investments to Henri Windel.....	\$15,000 00
Mortgage investments to Mans & Staude.....	16,000 00
Mortgage investments to Theodore Grady.....	600 00
Mortgage investments to Douglas Tilden.....	500 00
Balance cash on hand.....	21,493 79
	<u>\$53,593 79</u>

W. L. PRATHER,
Secretary and Treasurer.

OAKLAND, CAL., July 1, 1888.

Subscribed and sworn to before me, this twenty-seventh day of September, 1888.

Examined with the vouchers and found correct.

P. D. BROWNE, Notary Public.

October 11, 1888.

THEODORE A. LORD,
Auditor.

LIST OF PUPILS IN THE INSTITUTION SINCE JULY 1, 1886.

NAME.	TOWN.	County.
<i>Deaf and Dumb—Males.</i>		
Balaam, Lewis	Napa	Napa.
Bean, David M.	San Francisco	San Francisco.
Billings, Chas. W.	Oakland	Alameda.
Bucking, George F.	San Francisco	San Francisco.
Burgess, Rybert J.	Etiwanda	San Bernardino.
Butler, Louis L.	Stillwater	Shasta.
Cator, Azra A.	San Francisco	San Francisco.
Christeen, Fred. W.	Benicia	Solano.
Christensen, L. O.	Hollister	San Benito.
Coder, Sherman B.	Ukiah	Mendocino.
Cohn, Max	San Francisco	San Francisco.
Cohn, Bennie D.	San Francisco	San Francisco.
Cole, Jay	Alameda	Alameda.
Collishoun, Fred.	Oakland	Alameda.
Connelly, John	San Francisco	San Francisco.
Cotter, William	Haywards	Alameda.
Coulter, Charles B.	San Andreas	Calaveras.
Cretzer, Elza	San Francisco	San Francisco.
Daggett, Jas. W.	Oakland	Alameda.
Demartini, Andrew	Brentwood	Contra Costa.
Dilke, John T.	Sacramento	Sacramento.
Dinsmore, Bruce	Clipper Gap	Placer.
Dobner, Harry	Anaheim	Los Angeles.
Donahue, Augustus	Dixon	Solano.
Dugan, Edward	Janesville	Lassen.
Egan, William	San Francisco	San Francisco.
Fritz, Geo. H.	Los Angeles	Los Angeles.
Funkenstein, Leon	San Francisco	San Francisco.
Gale, William D.	Vallejo	Solano.
Garrido, Francisco	San Francisco	San Francisco.
Goodrich, Doney H.	Geyserville	Sonoma.
Gross, Charles A.	Stockton	San Joaquin.
Guinessi, Victor	San Francisco	San Francisco.
Hadlock, Hathron	Berkeley	Alameda.
Hartman, Edwin	San Francisco	San Francisco.
Hatch, Joseph	Redding	Shasta.
Hawver, George E.	San Francisco	San Francisco.
Heckman, Fred. W.	San Francisco	San Francisco.
Hinman, Gage J.	Nicolaus	Sutter.
Hoffman, Edward	St. Helena	Napa.
Holman, Willis G.	Linden	San Joaquin.
Horn, Sigmond	San Francisco	San Francisco.
Howson, James W.	Sacramento	Sacramento.
Isert, Gustav	San Francisco	San Francisco.
Jackson, Louie B.	Fruitvale	Alameda.
Jacobs, Isadore H.	San Francisco	San Francisco.
Johnson, James H.	Madison	Yolo.
Kaiser, George H.	Vallejo	Solano.
Kavanagh, William J.	Alameda	Alameda.
Keesing, Barnett	San Francisco	San Francisco.
Kinevan, Patrick	Goleta	Santa Barbara.
King, Chauncey	Pomona	Los Angeles.
Koch, Charles	Lancha Plana	Amador.
Lake, Frank	Santa Cruz	Santa Cruz.
Laughlin, Joseph	Los Angeles	Los Angeles.
Lehmann, Conrad	San Francisco	San Francisco.
Lewis, Beverley	Tracy	San Joaquin.
Lewis, James	Capay	Yolo.
Lippsett, Robert A.	San José	Santa Clara.
Lohmeyer, Ed. W. F.	San Francisco	San Francisco.

LIST OF PUPILS—Continued.

NAME.	TOWN.	County.
Love, Dugald M.	Antioch	Contra Costa.
McCarty, W. E.	San Francisco	San Francisco.
McPeake, Thomas	San Pablo	Contra Costa.
McQuillan, Chas.	San Francisco	San Francisco.
Miller, Charles F.	Jenny Lind	Calaveras.
Miller, Joseph	San Francisco	San Francisco.
Morse, Elmer R.	Berkeley	Alameda.
Murphy, Joseph	San Francisco	San Francisco.
Norton, Mayhew	San Francisco	San Francisco.
O'Brien, Daniel	San Francisco	San Francisco.
O'Malley, John M.	Washington Corners	Alameda.
O'Rourke, James P.	San Francisco	San Francisco.
Pearson, Willie	Los Angeles	Los Angeles.
Presley, Hiram L.	Lompoc	Santa Barbara.
Raffetto, Frank	San Francisco	San Francisco.
Rahmstorf, George H.	Byron	Alameda.
Raymond, H.	Berkeley	Alameda.
Redmond, G. S.	San José	Santa Clara.
Reichsrath, Charles	Alameda	Alameda.
Reynolds, Robert	Oakland	Alameda.
Rosenbaum, N.	San Francisco	San Francisco.
Saltenberger, George	San Francisco	San Francisco.
Sanguinetti, A.	Columbia	Tuolumne.
Saunders, James I.	Fresno	Fresno.
Schilling, William	San Francisco	San Francisco.
Schroder, George	San Francisco	San Francisco.
Selig, Isadore	San Francisco	San Francisco.
Shaw, James H.	Salinas	Monterey.
Sievers, Henry	Stockton	San Joaquin.
Smith, Ellsworth	Riverside	San Bernardino.
Stewart, Alva	Petaluma	Sonoma.
Stewart, Francis	Wilmington	Los Angeles.
Stewart, James H.	Orange	Los Angeles.
Stiles, Fred. A.	Santa Clara	Santa Clara.
Strobel, Fred. G.	San Francisco	San Francisco.
Sullivan, T. W.	San Francisco	San Francisco.
Taber, Hal.	Gibsonville	Sierra.
Taber, H. W.	Gibsonville	Sierra.
Taber, Oscar D.	Princeton	Colusa.
Tripp, W. H.	Stockton	San Joaquin.
Walters, Frank	San Francisco	San Francisco.
Wiley, Thomas	San Francisco	San Francisco.
Watson, Fred. W.	Napa	Napa.
Williams, Halleck	Tracy	San Joaquin.

Deaf and Dumb—Females.

Adair, Mary J.	Los Angeles	Los Angeles.
Ankeney, Frances	Sacramento	Sacramento.
Bradley, A. J.	Chico	Butte.
Bradley, C.	Chico	Butte.
Campbell, Marie	Los Angeles	Los Angeles.
Craddock, Rose	Shasta	Shasta.
Cohn, Celia	San Francisco	San Francisco.
Cole, Elizabeth D.	Oakland	Alameda.
Crawford, C.	Berkeley	Alameda.
Cromley, C. B.	Tulare	Tulare.
Daggett, M. E.	Oakland	Alameda.
Darling, Sarah	Bear Valley	Mariposa.
Decker, Delia	Chico	Butte.
De Frees, Mary A.	Oakland	Alameda.
De Gouy, Marguerite	St. Helena	Sonoma.
Di Vecchio, Ida	San Francisco	San Francisco.
Dobner, Ethel	Anaheim	Los Angeles.
Doren, Theresa	San Pablo	Contra Costa.
Downes, Mary	San Francisco	San Francisco.
Dugan, Mary E.	San Francisco	San Francisco.
Eades, Ida	Lookout	Modoc.
Emry, Frances	Chico	Butte.
Funkenstein, Pauline	San Francisco	San Francisco.
Gande, Mabel A.	San Francisco	San Francisco.

LIST OF PUPILS—Continued.

NAME.	Town.	County.
Gassagne, Adele	Los Angeles	Los Angeles.
Gilbert, Angele	San Francisco	San Francisco.
Halloran, Maggie	Birds Landing	Solano.
Hatch, Adeline	Redding	Shasta.
Hennessey, Isabella	San Francisco	San Francisco.
Hinman, Mabel A.	Sheridan	Placer.
Horrick, Lizzie	San Francisco	San Francisco.
Howell, Marcia	Poplar	Tulare.
Jackson, Estella	Fruitvale	Alameda.
Johnson, Lucy	San Francisco	San Francisco.
Jones, Edith May	Port Townsend	Washington Territory.
Kiddell, May G.	Sacramento	Sacramento.
Kuffel, Wilina	Bloomfield	Sonoma.
Ledden, Gertrude	San Francisco	San Francisco.
Lindstrom, Anna M.	San Francisco	San Francisco.
Lorenson, Emma	Chualar	Monterey.
Lynch, Irene	San Francisco	San Francisco.
Martinez, Natividad	Montecito	Santa Barbara.
Maury, Laura	San Leandro	Alameda.
McGrath, Mary	San Francisco	San Francisco.
McLaughlin, Sophie	San Rafael	Marin.
McLeod, Jane	San Diego	San Diego.
Mucha, Rosa	San Francisco	San Francisco.
Murphy, Maggie	Oakland	Alameda.
Müth, Elizabeth	Oakland	Alameda.
Norton, Frances A.	Oakland	Alameda.
O'Toole, Maggie	Madrone	Santa Clara.
Peterson, Rassmine	West Berkeley	Alameda.
Phelps, Fanny	Redlands	San Bernardino.
Porter, Fanny E.	Turlock	Stanislaus.
Presley, Patty B.	Lompoc	Santa Barbara.
Regli, Josephine	San Francisco	San Francisco.
Reichert, Mabel	Dixon	Solano.
Schutz, Mathilda	San Francisco	San Francisco.
Sieferman, Louisa	Woodland	Yolo.
Sieferman, Emile	Woodland	Yolo.
Peralta, Maria A.	Warm Springs	Alameda.
Peralta, Corina	Warm Springs	Alameda.
Welch, Nellie	Virginia City	Nevada.
Westfall, Dora A.	Berkeley	Alameda.

Blind—Males.

Barkhausen, August	San Francisco	San Francisco.
Bowman, Fred	San Francisco	San Francisco.
Brooks, William	Oakland	Alameda.
Carroll, William	Los Angeles	Los Angeles.
Coffey, John F.	San Francisco	San Francisco.
Ely, James	Oakland	Alameda.
Foster, Henry W.	San Francisco	San Francisco.
Henderson, Clarence	Horrs' Ranch	Stanislaus.
Henry, Jacob	Los Angeles	Los Angeles.
Howard, Albert	Colfax	Placer.
King, Frank J.	Alameda	Alameda.
Kleutsch, Frank J.	San Francisco	San Francisco.
Krasky, Daniel	Tulare	Tulare.
Lehe, Joseph	Virginia City	Nevada.
Maduro, Joseph	Wright's	Santa Cruz.
McLaughlin, T. G.	Petaluma	Sonoma.
O'Connor, John W.	San Francisco	San Francisco.
Perry, Newell L.	Millville	Shasta.
Richville, George	San Francisco	San Francisco.
Sedgwick, Thomas	Berkeley	Alameda.
Silva, John	Haywards	Alameda.
Smith, Cecil H.	Oakland	Alameda.

LIST OF PUPILS--Continued.

NAME.	Town.	County.
<i>Blind--Females.</i>		
Dalton, Nellie.....	Vallejo.....	Solano.
Eastman, Mary W.....	San Francisco.....	San Francisco.
Fallon, Kate.....	West Berkeley.....	Alameda.
Foley, Kate.....	Duarte.....	Los Angeles.
From, Sorine W.....	Salinas.....	Monterey.
Labarraque, C.....	San Felipe.....	Santa Clara.
Levy, Nathalie.....	San Francisco.....	San Francisco.
Logan, Elizabeth O.....	Penryn.....	Placer.
Madrid, Esperanza.....	Visalia.....	Tulare.
Mast, Augusta E.....	San Francisco.....	San Francisco.
Mullaney, Dorenda.....	San Francisco.....	San Francisco.
Oxton, Amelia.....	San Francisco.....	San Francisco.
Ramsell, Annie.....	San Francisco.....	San Francisco.
Silva, Maggie.....	San Francisco.....	San Francisco.
Smith, Johanna E.....	San Francisco.....	San Francisco.
Stolberg, Kate.....	Los Angeles.....	Los Angeles.
Taylor, Agnes M.....	San Francisco.....	San Francisco.
Whaley, Lizzie.....	San Francisco.....	San Francisco.

TERMS OF ADMISSION.

The California State Institution for the Deaf and Dumb, and the Blind, is located at Berkeley, about four miles north of the City of Oakland. Between San Francisco and Berkeley a steam ferry plies almost every half hour in the day, and from Oakland a railroad is constructed, which lands passengers within easy walking distance of the Institution.

First—The Institution offers its benefits to all deaf and dumb, or blind persons who are of age suitable for instruction, and who are of sound intellect, and free from vicious habits and contagious or offensive diseases.

Second—No charge is made for pupils from this State, except for clothing and traveling expenses.

Third—Pupils from other States or Territories are charged three hundred dollars per annum, payable quarterly in advance. No deduction is made from annual charge, on any account, except in case of prolonged sickness.

Fourth—The session begins on the fourth Wednesday of August, and closes the second Wednesday of June. Parents are earnestly requested to enter, or return their children, promptly at the beginning of the term. Only in extreme cases will the pupils be permitted to leave before school closes.

Fifth—Pupils should be provided with comfortable clothing when they enter the Institution, and their wardrobe renewed twice a year.

Sixth—All moneys designed for pupils should be placed in the hands of the Principal, to whom, also, all letters of inquiry, etc., should be addressed. Money orders should be drawn on the "Berkeley" Post Office; and all letters, packages, or trunks, should be addressed, "Institution for the Deaf and Dumb, and the Blind, Berkeley, Alameda County, California."

Parents or guardians of applicants for admission, are requested to furnish written answers to the following questions:

1. What is the name of the applicant?
2. When and where was he born?
3. Is his deafness or blindness from birth; or is it from accident or disease? If so, at what age and from what cause did he become so?
4. Is his deafness or blindness total or partial? If the latter, what is the degree of hearing or sight?
5. Have any attempts been made to remove his deafness or blindness; and if so, what are the results?
6. Are there any other cases of deafness, blindness, insanity, or idiocy in the same family, or among the collateral branches kindred? If so, how and when produced?
7. Was there any relation between parents or grandparents before marriage?
8. Has the child had the smallpox, scarlet fever, measles, mumps, whooping cough? Has he been vaccinated?
9. What are the names, nationality, occupation, residence, and Post Office address of parents?
10. What is the number of their children?

FIRST ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

INDUSTRIAL HOME OF MECHANICAL TRADES

FOR THE

ADULT BLIND.



SACRAMENTO:

STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.

1889.

REPORT.

His Excellency GEORGE STONEMAN, *Governor of California:*

In accordance with the Act of the Legislature, approved March 5, 1885, the Board of Directors of the Industrial Home of Mechanical Trades for the Adult Blind, respectfully present this, its first report of the condition and management of the Home.

The Directors of the Deaf, and Dumb, and Blind Asylum, to whom was committed the control of the new institution above named, organized as the governing body of the Home on the twenty-fourth of March, 1885.

The Board at that time consisted of R. A. Redman, George H. Rogers, H. A. Palmer, E. H. Woolsey, and W. C. Harrington.

Dr. E. H. Woolsey was chosen President and L. A. Redman, Secretary. Mr. John F. Burris was elected Superintendent of the Home.

The salary of the Secretary was fixed at \$100 per month, and that of the Superintendent at \$175. Both officers reside at the Home. The by-laws, a copy of which is transmitted herewith, were adopted July 9, 1885. Shortly after the organization of the Board Dr. W. C. Harrington resigned his position as Director, and on the sixth of July, 1885, Theodore A. Lord was appointed to fill the vacancy.

After the adoption of the by-laws, the Board elected Theodore A. Lord as President, and reelected the Superintendent and Secretary before named. It also elected Dr. John F. Foulkes, of Oakland, as Physician of the Home, his term of service to begin on the fifteenth of August, 1885. The Physician's salary was fixed at \$600 per annum.

Nine regular meetings and nine special meetings have been held by the Board since its organization. After much consideration and inquiry, and after advertising for proposals of buildings in the City of San Francisco, Oakland, or Alameda suitable for the purposes of a Home, it was decided to establish it on the premises known as the "Regan Place," on the corner of Telegraph Avenue and Thirty-sixth Street, near the City of Oakland.

This property consists of five acres of land, well improved with walks, spacious lawns, and fruit and ornamental trees.

The house contains eighteen rooms, and there is a barn and stable in addition. The premises were leased for two years at a rental of \$150 per month, with the option of buying at the end of the term for \$25,000.

Possession was taken on the first of July, 1885. A tract of two acres in the rear was subsequently leased for pasture at a rental of \$25 per annum.

Considerable time and expense were necessary to prepare the buildings for the reception of inmates, and for the most available industry, the manufacture of brooms.

A workshop, sixty by thirty feet, and two stories in height, was built in the month of October last, at a total cost of \$788 81, exclusive of 4 per cent on that amount for architect's fees. The upper story of this is now used as a dormitory.

The services of Mr. J. E. Lewis, foreman of the mechanical department of the St. Louis school for the blind, were secured during his vacation at a salary of \$75 per month. He remained from July 17 to September 4, 1885. His experience, high intelligence, and faithful attention to duty were of great benefit in properly starting the new industry. As it is necessary, in the beginning, that a seeing man should attend to the "finishing" of all work done by the blind, Mr. Lewis took under his tuition, Mr. W. C. Brewster, a young man residing in the neighborhood, who soon learned the various processes of broom making, and has since proved a very efficient and faithful employé.

Mr. Joseph Sanders, a blind man, who was formerly foreman in the working establishment for the blind in Philadelphia, commenced work at the Home on the first of September, and after Mr. Lewis' departure was appointed instructor of the mechanical department at a salary of \$50 per month.

The Home was open to applicants on the tenth of August, 1885, and two persons were admitted on that day.

The conditions and requisites for admission (apart from the limited capacity of the buildings) are shown in the little pamphlet herewith submitted, containing the by-laws, organic act, and questions for applicants.

There have been up to this date applications of very many more persons than the buildings could accommodate, or the appropriation would warrant the reception of.

There are now actually resident at the Home twenty-five blind men—all engaged in the manufacture of brooms.

Only one female was admitted, and she afterwards became insane, accidentally injured herself, and is now under treatment at the Alameda County Infirmary. The Board has decided not to admit females at present, as they would require separate dormitories and work rooms, which the money now on hand is not adequate to furnish. Besides, the present number of inmates seems ample to manufacture all the brooms for which a market can as yet be found.

The blind men show much aptitude in learning broom making, considering their natural disability: and after about three months' practice, become capable of doing well any part of the work to which they have been accustomed. In about a year they acquire such proficiency as to be able to make an entire broom, even to the "finishing."

The Board has now under consideration the expediency of introducing other industries besides broom making. It has not attempted anything else before, because, first, by universal experience, broom making has been the most successful industry for the blind: second, the expenditures for broom making machinery and material has been considerable, and some adequate return for the outlay was desired; third, additional machinery for other trades would involve additional expenses: fourth (and chiefly), many of the present inmates coming at different times had only partially learned even the separate parts of one trade.

Following is a list of the present inmates:

NAME.	Age.	Former Residence.	Cause of Blindness.
John Sexton.....	42	San Francisco.....	Brain fever.
Hugh Johnson.....	38	San Francisco.....	Mining accident.
John T. Moore.....	29	San Francisco.....	Injury at play when a boy.
C. P. Martin.....	23	San Francisco.....	Ulceration of cornea in infancy, from a cold.
D. Harrington.....	49	San Francisco.....	Injury in the mines.
A. E. Hite.....	55	Chico, Butte County.....	Struck in the eye with a whip.
Louis Weiger.....	30	San Francisco.....	Gunshot wound in head.
D. S. Weider.....	20	Oakland.....	Congenital cataract.
Geo. Calvert.....	19	San Francisco.....	Paralysis of optic nerve.
H. M. Nagle.....	25	San Francisco.....	Paralysis of optic nerve.
E. F. Smith.....	61	Oakland.....	Glaucoma.
E. Porter.....	28	Placer County.....	Lifting heavy weights.
G. Campbell.....	64	Sacramento.....	Inflammation from foreign substance.
T. Henery.....	47	San Francisco.....	Accident in a well.
C. W. Graves.....	47	San Francisco.....	Supposed paralysis of nerve.
T. Powers.....	40	San Francisco.....	Powder accident.
T. Bean.....	60	Oakland.....	Cataract.
C. H. Morey.....	37	San Francisco.....	Excessive use of tobacco.
G. H. Hughes.....	43	Soldiers' Home.....	Powder accident.
P. Tighe.....	39	San Francisco.....	Accident while working in iron.
P. Augustine.....	46	San Francisco.....	Exposure to bad weather.
N. Stanovitch.....	44	San Francisco.....	Neuralgia.
H. W. Davis.....	33	Oroville, Butte County.....	Mining accident.
J. Storck.....	33	Durham, Butte County.....	Inherited syphilis.
Con. Shea.....	50	San Francisco.....	Fever.

There are no beneficiaries doing work at their homes.

The health of the inmates has been generally good, and they seem cheerful and contented.

The total number of brooms made to date (December 28, 1885) is seven thousand nine hundred and sixty-one; total number sold to date, four thousand and twenty-five; total number on hand to date, three thousand nine hundred and thirty-six. The brooms now made at the Home will compare favorably, we believe, with any in our markets; they find a ready sale with all who have seen them.

The inmates receive no pay until they have worked at the trade for three months. By that time they are able to earn individually about \$10 per month. No charge is made at any time for board or lodging.

The men work generally about eight hours per day; but as their compensation depends upon the amount of work they do they are not held strictly to hours. The number and monthly pay of employes are as follows:

One carpenter.....	\$75 00
One gardener.....	65 00
One stableman.....	40 00
One matron.....	30 00
One cook.....	35 00
One second cook.....	25 00
One waitress.....	25 00
One foreman of the shop.....	30 00
One instructor.....	50 00
One night watchman.....	30 00
One laundress, \$50 for thirty persons, and \$1 20 for each additional person.	

The total amount expended to December 1, 1885, is \$14,618 89.

This is made up as follows:

Building and furniture account.....	\$6,177 74
Domestic account, including salaries, etc.	5,968 12
Mechanical account.....	2,473 03
Total.....	\$14,618 89

The details are on file in the office of the Controller, and also at the Home.

The total amount of money received to date is as follows:

For the month of August, 1885	\$6 30
For the month of September, 1885	68 15
For the month of October, 1885	143 50
For the month of November, 1885	253 40
Amount paid to State Treasurer	<u>\$471 35</u>

In addition to the above amount there has been collected thus far in the month of December, 1885, the sum of \$163 55. There is due for goods sold in December, \$172 05. There is due for goods sold in November, \$21 75. No bequests or donations have been received by the Board. The considerable expenditure thus far has been a necessary result of the establishment of a new enterprise; most of the expenses (aside from those of the payroll, provisions, and material) will not be recurring, and from the steadily increasing monthly receipts we have the hope that the next year will show returns much more nearly proportioned to the outlay.

The scarcity and high price of broom corn throughout the United States have been somewhat of a disadvantage, and we have been compelled to get three carloads (about twenty-five tons) from St. Louis and four tons from Chicago. We trust that the new crop next summer will obviate this inconvenience.

Respectfully submitted.

THEODORE A. LORD,
President of the Board.

L. A. REDMAN, Secretary.
Dated December 28, 1885.

Subscribed and sworn to by T. A. Lord, before me, this thirtieth day of December, 1885.

[SEAL.]

W. L. PRATHER,
Notary Public.

THIRD ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

INDUSTRIAL HOME OF MECHANICAL TRADES

FOR THE

ADULT BLIND.



SACRAMENTO:

STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1889.

REPORT.

OAKLAND, CALIFORNIA, December 31, 1 87

To Hon. R. W. WATERMAN, Governor of the State of California:

SIR: In accordance with Section 7, Article III, of "An Act establishing an Industrial Home of Mechanical Trades for the Adult Blind of the State of California," approved March 17, 1887, the Board of Directors present this report of the management of the Home, in accordance with such provisions of Section 7, for the year ending November 30, 1887.

The Board of Directors, on the first day of December, 1887, consisted of the following members: Theodore A. Lord, President; H. A. Palmer, Vice-President; Geo. H. Rogers, E. H. Woolsey, R. A. Redman.

The officers elected by said Board were as follows: L. A. Redman, Secretary; T. O. Crawford, Superintendent; Dr. J. F. Foulkes, Physician.

During the winter of 1887-88 there were two vacancies in the Board, which were filled by the appointment of John A. Stanly and George E. Whitney.

Under the Act of March 17, 1887, an entire new Board was appointed by Governor Bartlett, composed of the following gentlemen: J. C. Ainsworth, Warren Olney, F. M. Smith, J. P. Irish, and Thomas Prather. These gentlemen met and organized with J. C. Ainsworth as President, and J. P. Irish, Vice-President. T. O. Crawford was elected Superintendent, L. A. Redman was elected Secretary, Dr. A. Fine was elected Physician.

At the date of this report the Board consists of the five members appointed by Governor Bartlett, with one exception—Thomas Prather resigned, and the vacancy has not yet been filled. The officers of the Board elected May 2, 1887, and still holding office, are as follows: L. A. Redman, Secretary; T. O. Crawford, Superintendent; Dr. A. Fine, Physician. The teachers and shop assistants are: Joseph Sanders, teacher; W. C. Brewster, foreman; William Hunt, assistant foreman; Miss Gertrude Mengel, assistant teacher. The domestics are: Mrs. George Ireland, matron; Miss Amanda Henriksen, cook; Miss Lottie Johnson, assistant cook; Mary O'Brien and Allie Schack, waiters; George Ireland, carpenter; John Gregg, gardener; Joseph Haberlin, watchman; James Grummett, laborer; Harry Miller, stableman and driver; George Graves, janitor and bedmaker.

Inmates November 3, 1887.

NAME.	Age.	Former Residence.	Cause of Blindness.
John Sexton	44	San Francisco	Brain fever.
John T. Moore	31	San Francisco	Injury when a boy.
Thos. Henery	49	San Francisco	Accident in a well.
Thos. Powers	42	San Francisco	Powder accident.
Patrick Tighe	41	San Francisco	Accident while working in iron.
N. Stanovitch	46	San Francisco	Neuralgia.
Con. Shea	52	San Francisco	Fever.
Mich. Riley	47	San Francisco	Supposed heavy lifting.
Law. Riley	40	San Francisco	
Jas. Croak	54	San Francisco	Accident in mines.
Tom Hoff	21	San Francisco	Dropsy.
Jacob Kundert	52	San Francisco	Inflammation.

INMATES—Continued.

NAME.	Age.	Former Residence.	Cause of Blindness.
Wm. Burgon.....	52	San Francisco.....	Atrophy of optic nerve.
C. W. Thomas.....	26	San Francisco.....	Injury to eye by stone.
Dan. Weider.....	22	Oakland.....	Congenital cataract.
E. F. Smith.....	63	Oakland.....	Glaucoma.
Thos. Bean.....	62	Oakland.....	Cataract.
Geo. Dudley.....	34	Placer Co.....	Traumatism.
Jos. Maduro.....	20	Berkeley.....	Result of cold.
Chas. Lerch.....	28	Lake Co.....	Inflammation.
H. V. Hull.....	19	Stockton.....	Traumatism.
Pat. Donovan.....	39	Alameda Co.....	Traumatism of right eye.
Con. Cronin.....	56	Santa Clara Co.....	Rheumatic iritis (supposed).
John Durham.....	18	Alameda Co.....	Paralysis of optic nerve.
John T. Gafney.....	34	Stockton.....	Scarlet fever.
Peter Miller.....	46	San Buenaventura.....	Unknown.
Felix O'Niel.....	42	Sacramento.....	Injury to eye.
James Kerley.....	30	Modoc Co.....	Injury to eye.
A. E. Hite.....	57	Butte Co.....	Injury to eye.
Ed. Porter.....	30	Placer Co.....	Lifting heavy weights.
Gordon Campbell.....	66	Sacramento.....	Inflammation from foreign substance.
G. H. Hughes.....	45	Soldiers' Home.....	Powder accident.
Jacob Storck.....	35	Butte Co.....	.....
Jos. Miller.....	42	Sacramento.....	Unknown.
Thos. D. Henderson.....	46	San Francisco.....	Unknown.
M. T. O'Brien.....	40	San Francisco.....	Granulation of lids.
Jas. Gordon.....	70	Alameda Co.....	Gradual failure of sight.
John Chambers.....	55	Siskiyou.....	Adhesive inflammation of cornea.
Henry Parker.....	54	Siskiyou.....	Cataract.
Rich. Sublett.....	35	San Francisco.....	Gunpowder explosion.
F. V. Anderson.....	47	San Francisco.....	Paralysis of optic nerve.
David Foreman.....	61	San Francisco.....	Blind in right eye from childhood; blind in left eye from neuralgia.
Annie Fenuel.....	30	San Francisco.....	Accident to eye.
Emma L. Mast.....	24	San Francisco.....	Gradual failure of sight.
Katie Clement.....	23	San Francisco.....	Caused by sickness when five days old.
Mary J. Flynn.....	25	San Francisco.....	Cataract.
Maggie Aitken.....	29	Benicia.....	Cause unknown.
Louisa A. Haney.....	29	Bath, Placer Co.....	Spinal meningitis.
H. L. Smith*.....	32	Yreka.....	Paralysis of optic nerve.
L. H. Andrews*.....	30	Woodland.....	Injury to one eye, other through sympathy.

* Smith and Andrews are out on leave of absence; both are inmates.

Number of inmates belonging on November thirtieth, fifty; present, forty-eight.

MANUFACTURING DEPARTMENT.

Number of brooms on hand December, 1886.....	4,863
Number made during December, 1886.....	4,925
Number made during January, 1887.....	6,229
Number made during February, 1887.....	3,427
Number made during March, 1887.....	3,356
Number made during April, 1887.....	1,994
Number made during May, 1887.....	2,196
Number made during June, 1887.....	8,606
Number made during July, 1887.....	6,206
Number made during August, 1887.....	7,618
Number made during September, 1887.....	6,089
Number made during October, 1887.....	4,297
Number made during November, 1887.....	5,580

Total for the year..... 65,386

Brooms sold during December	3,072
Brooms sold during January	5,725
Brooms sold during February	3,311
Brooms sold during March	2,552
Brooms sold during April	3,683
Brooms sold during May	2,211
Brooms sold during June	4,501
Brooms sold during July	6,637
Brooms sold during August	7,606
Brooms sold during September	4,809
Brooms sold during October	3,995
Brooms sold during November	2,868
Total sold December 1, 1887	50,970
On hand as per above	14,416

NOTE.—The November, 1887, report gives the number of brooms on hand as 14,797. This discrepancy of 381 brooms is accounted for from the fact that the apprentice brooms and "dicks" are not counted in in each month, as they are not salable brooms. At the end of the year they are taken as "stock" at whatever they are worth.

Cash received during the year ending November 30, 1887:

December, 1886	\$615 33
January, 1887	1,112 96
February	586 53
March	612 70
April	797 10
May	471 90
June	536 22
July	976 30
August	793 19
September	901 25
October	645 79
November	507 03
Total collections for year	\$8,556 30
The amount outstanding December 1, 1887, was	1,381 56
Total for year	\$9,937 86

VALUE OF BROOMS AND RAW MATERIAL ON HAND NOVEMBER 30, 1887.

The value of brooms on hand November 30, 1887, was, according to the statement of W. C. Brewster, shop foreman, \$2,473 57.

The value of raw material on hand same date was \$3,661 87.

SALARIES AND WAGES ACCOUNT.

	Per Month.
Superintendent	\$175 00
Secretary and Clerk	100 00
Physician	50 00
Teacher	50 00
Assistant teacher	25 00
Foreman	50 00
Assistant foreman	20 00
Driver and reader	30 00
Carpenter and general man	35 00
Matron	35 00
Cook	35 00
Assistant cook	25 00
Two waiters	50 00
Watchman	30 00
General laborer	30 00
Gardener	30 00
Janitor	25 00
Total eighteen, at a salary of	\$795 00

Wages paid to blind inmates during—

December, 1886	\$237 44
January, 1887	321 15
February, 1887	169 86
March, 1887	193 30
April, 1887	117 84
May, 1887	154 22
June, 1887	351 92
July, 1887	327 90
August, 1887	406 12
September, 1887	359 59
October, 1887	237 68
November, 1887	277 31
Total amount paid inmates	\$3,156 33

SUMMARY OF MISCELLANEOUS EXPENSES.

MONTHS.	Provisions, Light, Fuel, Vegetables, Fruit.	Rent.	Furniture.	House Expense.	Machinery.
December, 1886	\$389 70	\$156 00	\$75 55	\$10 00	
January, 1887	393 37	6 90	33 50	45 45	
February, 1887	461 30	155 50	11 42	22 15	
March, 1887	567 53	155 80		11 50	\$5 10
April, 1887	389 93	156 00		34 45	
May, 1887	501 77	156 30	236 83	679 53	36 75
June, 1887	442 40	5 00	93 38	458 52	54 07
July, 1887	433 50			1,478 73	79 82
August, 1887	399 02			18 95	
September, 1887	473 27		102 00	553 30	
October, 1887	524 99		307 50	163 70	
November, 1887	453 29		3 85	95 99	
Totals	\$5,430 07	\$791 50	\$864 03	\$3,572 27	\$175 74

EACH MONTH FROM DECEMBER, 1886, TO DECEMBER, 1887.

MONTHS.	Miscella- neous.	Shop Ex- pense.	Raw Mate- rial.	Aggregate.
December, 1886	\$126 10	\$31 15	\$54 57	\$843 07
January, 1887	85 30	194 90	44 22	803 64
February, 1887	183 80	163 17	307 96	1,305 30
March, 1887	8 95	108 05	16 50	873 43
April, 1887	201 79	87 30	127 47	996 94
May, 1887	104 35	192 60	3,299 14	5,207 27
June, 1887	88 85	20 65	42 01	1,204 88
July, 1887	244 35	334 83	49 50	2,620 73
August, 1887	138 11	163 88	854 65	1,574 61
September, 1887	277 43	16 55	30 25	1,452 80
October, 1887	155 95	30 75	3,080 35	4,263 24
November, 1887	78 50	56 80	20 25	708 68
Totals	\$1,693 48	\$1,400 63	\$7,926 87	\$21,854 59

SUMMARY OF SALARIES AND WAGES (EXCEPT TO INMATES) FOR EACH MONTH.

MONTHS.	General Salaries.	Salaries of Teachers.	Wages of Domestics.	Aggregate.
December, 1886	\$325 00	\$106 00	\$235 00	\$666 00
January, 1887	325 00	116 00	235 00	676 00
February, 1887	325 00	116 00	240 00	681 00
March, 1887	325 00	116 00	240 00	681 00
April, 1887	325 00	116 00	243 35	684 35
May, 1887	325 00	116 00	290 00	731 00
June, 1887	325 00	120 00	285 00	730 00
July, 1887	325 00	120 00	285 00	730 00
August, 1887	325 00	120 00	278 00	723 00
September, 1887	325 00	120 00	290 00	735 00
October, 1887	325 00	132 50	331 25	788 75
November, 1887	275 00	145 00	339 25	759 25
Totals	\$3,850 00	\$1,443 50	\$3,291 85	\$8,585 35

MONTHS.	Salaries and Wages.	General and Miscellaneous.	Wages to Blind Men.	Total for all Expenses for Each Month.
December, 1886	\$666 00	\$843 07	\$239 44	\$1,748 51
January, 1887	676 00	803 64	321 15	1,800 79
February, 1887	681 00	1,305 30	169 86	2,156 16
March, 1887	681 00	873 43	193 30	1,747 73
April, 1887	684 35	996 94	117 84	1,799 13
May, 1887	731 00	5,207 27	154 22	6,092 49
June, 1887	730 00	1,204 88	351 92	2,286 80
July, 1887	730 00	2,620 73	327 90	3,678 63
August, 1887	723 00	1,574 61	406 12	2,703 73
September, 1887	735 00	1,452 80	359 59	2,547 39
October, 1887	788 75	4,263 24	237 68	5,289 67
November, 1887	759 25	708 68	277 31	1,745 24
Total for year	\$8,585 35	\$21,854 59	\$3,156 33	\$33,596 27

The total expense for the year ending November 30, 1887, as per bills paid, was \$33,596 27.

RECAPITULATION.

The amount of money drawn from the State Treasury during the year ending November 30, 1887, was \$33,596 27. The amount returned to the Treasury was \$8,556 30. On November thirtieth there were solvent outstanding accounts amounting to \$1,381 56. There were also on hand brooms worth \$2,473 57, and raw material worth \$3,661 87. The Home should be credited with the sum of these items, or \$16,073 30. From this credit of \$16,073 30 should be deducted the credit of \$4,732 66, with which we commenced the year. This leaves a difference of \$11,340 64, which is the true credit to be placed in favor of the Home for the year ending November 30, 1887.

The cost of running the Home for the year, including permanent improvements, is the difference between \$33,596 27 and \$11,340 64, or \$22,255 63. Of this sum of \$22,255 63, there was expended the sum of \$6,012 67 in permanent improvements, such as furniture, machinery, addition to shop building, addition to Home building, out-buildings, sewers, walks, painting, etc. The difference between these two sums, or \$16,242 96, is the actual running expense of the Home for the year ending November 30, 1887. This gives an average monthly expense of \$1,353 58. From

this sum must be deducted the sum paid to the teachers and to the inmates, as workmen, of \$383 33. This leaves the sum of \$970 25 as the current monthly expense of the household department. This sum divided by sixty-five, the average number of persons at the Home for each month, gives as the average cost per person to the State the sum of \$14 93.

The total amount expended for groceries, meat, fish, vegetables, fruit, fuel, light, provisions of all kinds, general salaries, servants' wages, washing, and running household expenses was \$12,851 92; the monthly average was \$1,070 99; amount per person per month, \$16 47.

This sum includes the salaries of the Superintendent, the Secretary, the Physician, the wages paid domestics and outdoor help, board, lodging, washing, medical attendance and medicine, repair of clothing, and material for the same, funeral expense of three deceased inmates, wages of nurses for sick men, fuel, light, and rent.

The amount of money expended for teaching during the year was \$1,-443 50; average per month was \$120 30. This sum divided by forty-five, the average number of inmates per month, gives us the cost of instruction per person per month the sum of \$2 67. The average monthly wages paid to the blind inmates for the year was \$263 03.

The total amount of money drawn from the Treasury during the year was \$33,596 27.

Amount returned	\$8,556 30
Outstanding solvent accounts	1,381 56
Value of brooms on hand	2,473 57
Value of raw material on hand	3,661 87
<hr/>	
Total credits	\$16,073 30
Deduct credits at commencement of year of	4,732 66
<hr/>	
And then is left	\$11,340 64

Which is a little more than 33 per cent of the whole amount drawn from the State Treasury.

The permanent improvements amounting to \$6,012 67 ought to be added to these credits, since these improvements are lasting; then the credits are 51 per cent of the money drawn from the Treasury.

The total amount paid for raw material for the year was	\$7,926 87
Value of raw material and brooms on hand at beginning of year and bills receivable	4,732 66
<hr/>	
Sum of debits in manufacturing department	\$12,659 53
<hr/>	
Money returned to State Treasury	\$8,556 30
Outstanding accounts solvent	1,381 56
Value of brooms on hand	2,473 57
Value of raw material on hand	3,661 87
<hr/>	
Total credits in manufacturing department	\$16,073 30
Excess of credits in manufacturing department	\$3,413 77

Five blind men have been engaged in work outside the Home. One of these, Jos. Sinkinson, is in Santa Cruz; one, Mr. Luke Andrews, is in Woodland; another, H. L. Smith, is in the northern part of the State. Two young men are at work here during the day, and at their homes during the evening. A few more will leave during the year and establish themselves in business.

The great majority have no homes awaiting them, and must continue to live at the Home. Indeed, this is all the home they have, and to many there will be no going out and away till the end of life is reached. To all

blind men (who have been inmates) that are engaged in manufacturing brooms at their homes, the Board of Directors furnish raw material at a slight advance on cost price.

It may be fitting at this time to quote from a former report the aims of this Home:

REMARKS AND RECOMMENDATIONS.

A manufacturing institution depending for its products upon blind men, and supporting and teaching them at the same time, can never be expected to be peculiarly profitable, or even self supporting.

Any pretense that it can be made so we believe to be either visionary or intentionally deceptive. Experience does not justify it even in the older States where expenses are less than they are here.

In this State it is well known that many manufactories, even with the cheapest labor of seeing men, lead but a struggling existence.

We believe that but little more than fifty per cent of the yearly cost of any institution for the blind can be reasonably expected to be returned to the State.

In that view the question arises, does the end to be attained justify the cost? Upon this question we beg leave to offer some suggestions.

The public, as a matter of fact as well as of right, is obliged to support those who are unable in some way to support themselves.

Whether this is done directly by the State, or separately by the different counties, the result is substantially the same—the public pays for it.

What class of afflicted and dependent people appeals more strongly to human sympathy and benevolence than the blind?

Frequently accident and exposure in varied employments have been the cause of their blindness, so that the very energy and industry which go to make men the best citizens, have been the means of producing the present helplessness of these. Many, perhaps most of the blind, are compelled to live in almshouses, or else to eke out a meager and precarious existence by actual begging, playing musical instruments in the streets, which is only begging under another form, or by selling small wares which people buy from sympathy. Those who live at home are usually dependent upon friends and relatives who can ill endure the burden which affection constrains them to bear. In any case, the blind man feels his helplessness, his thoughts turn upon himself with morbid introspection, and he soon settles into idleness and apathy. The past brings to him only the sorrow of "remembering happier things," and the future offers no hope, but that which shines beyond the grave.

Let that man be taught a trade, and find that he can earn something for himself, and can contribute to the support of those dear to him, and not only is his mind diverted for the time, but all good impulses are awakened within him. Hope, ambition, energy are aroused when he realizes that he can take his place as a useful factor in society. He feels that dignity and self-respect which those alone can feel who earn the reward of honest effort. In spite of his infirmity he secures his own happiness and the well-being of those about him.

The reasons for the continuation and permanent establishment of the Home may be summarized as follows:

I. The benefit to the individual as a work of charity and humanity. This will extend directly to many hundred blind men and women in the State, and indirectly to many more of their relatives and friends. The Home is not intended as an asylum for the permanent residence of all its inmates, but rather as a school from which many may graduate in rotation.

II. The benefit to the State in changing a mendicant and helpless class into a producing, wage-earning class of skilled workmen.

III. The benefit to the State in the increase of producing power—the building up of home manufacture by white labor—which is what California especially needs. This institution has already proved a potent competitor against those manufacturers who have employed and who now employ Chinese labor. That is a perfectly lawful and measurably effectual way of solving the Chinese problem.

IV. Benefit to the State in stimulating the growth of raw material, as broom corn, etc.

V. Benefit to the State in furnishing the people with articles of universal use in greater abundance, and consequently at cheaper cost than heretofore. If brooms are made cheaply here, there will be no occasion for importing them from St. Louis or other eastern cities, and the money will be retained among our own people.

VI. Benefit to all the people of the State in preventing monopolies, and the formation of "corners," to make them pay dearly for necessities. It is from those who have heretofore had this power, and who furthered it by the employment of Chinese labor, that the chief opposition to this institution has come.

Whatever opinions may be held respecting the use of convict labor by the State, in competition with other labor, the principles in that case in nowise apply to the employment of the blind. It is needless to say that a blind man has as good a right to earn his living as a seeing man, and if the State helps the blind man to fifty per cent of this living, he is then no more than put on an equality with a seeing man. Such competition no good cit-

izen has any right to object to. We believe that objections of this kind arise solely from mercenary and avaricious motives.

Furthermore, for the one, two, or three broom-makers who are or have been employing Chinese labor, and who may lose some percentage of their profits by the competition of blind men, there are hundreds of thousands of people in the State (besides the blind men themselves) who are materially benefited by such competition. We have not heard that the broom-makers of San Francisco are such public benefactors, or have ever done such distinguished public service, as to entitle them to the special protection of the State against the blind men of the State.

We think that a full consideration of the foregoing reasons will clearly show the way in which the State will find its profit by helping its afflicted citizens, even if the money receipts of the Home should not exceed fifty per cent of the expenditures.

Notwithstanding the unjust attacks on the Home, and of criticism as foolish as it is ignorant, we believe the institution is one that ought to be supported and its sphere of usefulness enlarged.

We hope to see within its protection all the blind of the State. The grounds are sufficient, and, with the proper buildings erected on them, a Home not only for those that are able to work, but for those as well who are past the time of hard labor, can be established.

CITY AND COUNTY OF SAN FRANCISCO, }
STATE OF CALIFORNIA. } ss.

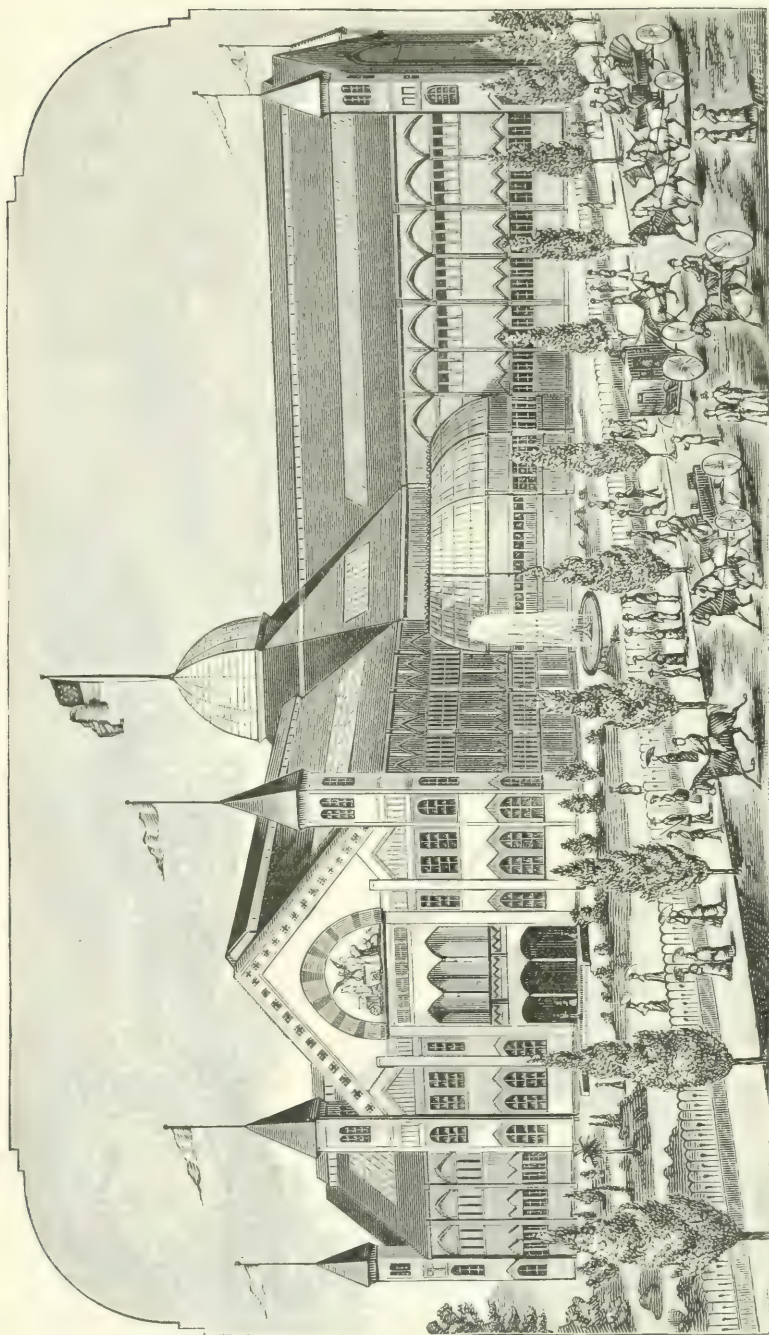
Warren Olney, being duly sworn, says: That John P. Irish, President of the Board of Trustees of the Home for the Adult Blind, is absent from the State of California, and that deponent is Vice-President of said Board; that he has read the foregoing report, and knows the contents thereof, and the same is true to the best of deponent's knowledge, information, and belief.

WARREN OLNEY.

Subscribed and sworn to before me this fifteenth day of February, 1888.

[SEAL.]

LOUIS B. HARRIS, Notary Public.



STATE AGRICULTURAL AND INDUSTRIAL EXPOSITION BUILDING.

Sacramento, California.

TRANSACTIONS

OF THE

CALIFORNIA

STATE AGRICULTURAL SOCIETY

DURING THE YEAR 1887.



SACRAMENTO:

STATE OFFICE, : : : J. D. YOUNG, SUPT. STATE PRINTING.
1888.

STATE BOARD OF AGRICULTURE FOR 1887.

DIRECTORS.

JOHN BOGGS	Princeton, Colusa County.
C. M. CHASE	San Francisco.
H. M. LA RUE	Sacramento.
CHRISTOPHER GREEN	Sacramento.
JESSE D. CARR.....	Salinas, Monterey County.
J. McM. SHAFTER.....	San Francisco.
G. W. HANCOCK	Sacramento.
FREDERICK COX	Sacramento.
L. J. ROSE.....	San Gabriel, Los Angeles County.
P. A. FINIGAN.....	San Francisco.
E. C. SINGLETARY.....	San José.
L. U. SHIPPEE	Stockton.

OFFICERS OF THE BOARD.

PRESIDENT,

L. U. SHIPPEE

Stockton.

SECRETARY,

EDWIN F. SMITH

Sacramento.

TREASURER,

L. A. UPSON

Sacramento.

SUPERINTENDENT OF PARK,

G. W. HANCOCK

Sacramento.

SUPERINTENDENT OF PAVILION,

H. M. LA RUE

Sacramento.

STATE AGRICULTURAL SOCIETY.

AN ACT

TO PROVIDE FOR THE MANAGEMENT AND CONTROL OF THE STATE AGRICULTURAL SOCIETY BY THE STATE.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The State Agricultural Society is hereby declared a State institution.

SEC. 2. Within ten days after the passage of this Act, the Governor shall appoint twelve resident citizens of the State, who shall, when organized, constitute a State Board of Agriculture, who shall, except as hereinafter provided, hold office for the term of four years, and until their successors are appointed and qualified. Vacancies occurring from any cause in the Board shall be filled by appointment of the Governor for the unexpired term of the office vacated.

SEC. 3. Within ten days after their appointment, the persons so appointed shall qualify, as required by the Constitution, and shall meet at the office of the State Agricultural Society, and organize by the election of one of their number as President of the Board and said society, who shall hold said office of President for the term of one year, and until his successor is elected and qualified. The Board shall also elect a Secretary and Treasurer, not of their number, who shall each hold office at the discretion of the Board.

SEC. 4. At the same meeting the members of the Board shall, by lot or otherwise, classify themselves into four classes of three members each. The terms of office of the first class shall expire at the end of the first fiscal year; of the second class, of the second year; of the third class, of the third year; of the fourth class, at the end of the full term of four years. The fiscal year shall be from the first of February to the first of February.

SEC. 5. The State Board of Agriculture shall be charged with the exclusive management and control of the State Agricultural Society as a State institution; shall have possession and care of its property, and be intrusted with the direction of its entire business and financial affairs. They shall define the duties of the Secretary and Treasurer, fix their bonds and compensation, and shall have power to make all necessary changes in the Constitution and rules of the society, to adapt the same to the provisions of this Act, and to the management of the society, its meetings and exhibitions. They shall provide for an annual Fair or exhibition by the society of all the industries and industrial products of the State, at the City of Sacramento: *provided*, that in no event shall the State be liable for any premium awarded or debt created by said Board of Agriculture.

SEC. 6. The Board shall have power to appoint all necessary Marshals and police to keep order and preserve peace at the annual Fairs of the society; and the officers so appointed shall be vested with the same authority for the preservation of order and peace, on the grounds and in the buildings of the society, that executive peace officers are vested with by law.

SEC. 7. Said Board shall use all suitable means to collect and disseminate all kinds of information calculated to educate and benefit the industrial classes, develop the resources, and advance the material interests of the State, and shall, on or before the first day of February of each year, report to the Governor a full and detailed account of their transactions, statistics, and information gained, and also a full financial statement of all funds received and disbursed. They shall also make such suggestions and recommendations as experience and good policy may dictate for the improvement and advancement of the agricultural and kindred industries.

SEC. 8. The Superintendent of State Printing shall, each year, print and bind in cloth four thousand volumes of said transactions, and deliver the same to said Board of Agriculture for distribution and exchange. He shall also do such job printing as said Board may require to carry out the provisions of this Act.

SEC. 9. The Directors or Board of Managers of each county and district agricultural society or association, and of county, district, or State horticultural and stock breeding association or society, organized and acting under the laws of this State, shall report

annually, on or before the first day of April, to the State Board of Agriculture, the name and Post Office address of each officer of such society or association; and, on or before the first day of December, shall report to the Board of Agriculture the transactions of said society, including the premiums offered, the list of stock and articles exhibited, and the premiums paid; the amount of receipts and expenditures for the year, the new industries inaugurated, and any and all facts and statistics showing the development and extent of the industries, products, and resources of the country or district embraced within the management of such society or association; *provided*, that the provisions of this Act shall not apply to any Board of Commissioners or other body organized under the laws of this State, the object of which is to promote vinicultural industries, unless such Board or body shall voluntarily request the privilege of making such reports as are called for by this Act, in which case this Board or body shall enjoy equal privileges as are accorded to other institutions devoted to agriculture.

SEC. 10. To facilitate such reports, the State Board of Agriculture shall have prepared, and shall furnish such societies with necessary schedules and blanks for such reports, and such State Board shall include such reports from societies and associations, or so much thereof as they may deem advisable, in their report to the Governor.

SEC. 11. When said State Board of Agriculture shall have been organized and classified as provided herein, the Secretary of the Board shall report such organization and classification to the Governor. He shall also report any vacancy that may occur in said Board at any time.

SEC. 12. All laws and parts of laws in conflict with this Act are hereby repealed.

SEC. 13. This Act shall take effect and be in force from and after its passage.

CONSTITUTION

OF THE

CALIFORNIA STATE AGRICULTURAL SOCIETY.

[Revised and adopted by the State Board of Agriculture, April 20, 1886.]

NAME.

SECTION 1. This society shall be called "The California State Agricultural Society."

OBJECT.

SEC. 2. It shall be the object of this society to encourage the cultivation of the soil, and the general development of all the agricultural resources of this State.

SEC. 3. To foster every branch of mechanical and household arts calculated to increase the comforts of home life.

SEC. 4. To extend and facilitate the various branches of mining and mining interest.

MEMBERSHIP.

SEC. 5. *Annual Members.*—Any person who shall pay into the funds of this society the sum of five dollars, may become a member of the same; such membership to expire at the end of the current fiscal year.

SEC. 6. *Life Members.*—Any person may become a member for life by the payment of fifty dollars; or, if already a member, by the payment of forty-five dollars, or by serving a full term as a member of the State Board of Agriculture, and shall thereafter be exempt from all dues and assessments.

SEC. 7. *Honorary and Corresponding Members.*—Any person whom the Board shall propose may be elected an honorary or corresponding member, and shall enjoy, free of charge, all the privileges of the society, except voting and holding office.

SEC. 8. *Privileges of Members.*—Any citizen of this State, being a life member of this society, shall be furnished with a personal badge for his separate use, which shall entitle him to admission to all the exhibitions of the society, the quarter-stretch, the Grand Stand at Park, during his lifetime, and a separate ticket for the use of his wife and minor children only, which will entitle them to admission to all the exhibitions of the society, each day, as follows: a coupon for the Park (morning), a coupon for the Park (afternoon), a coupon for Pavilion afternoon and evening, and shall be permitted to compete for premiums in any and all departments.

Annual members will be furnished with a ticket that will entitle him, accompanied by a lady, and one child under fifteen years of age, or, if purchased in the name of a lady, will admit the owner and lady, and one child under fifteen years of age, twice daily at Park and Pavilion, and permission to compete for premiums in any and all departments.

SEC. 9. *Expulsion of Members.*—Any member who shall present for exhibition any article or animal which he is not entitled by the rules of the society to exhibit, or who shall attempt to deceive, or be guilty of a breach of good faith toward the society, may be expelled by a vote of two thirds of the members present at any meeting of the Board; *provided*, always, that no member shall be expelled unless written notice of the alleged offense shall have been served on him, or left at his usual place of residence at least twenty days previous to the action.

OFFICERS.

SEC. 10. The officers of this society shall consist of twelve Directors, to be appointed by the Governor, who shall constitute a State Board of Agriculture, seven of whom shall constitute a quorum. The Board shall be charged with the exclusive management and control of the State Agricultural Society as a State institution; shall have possession and care of its property, and be intrusted with the direction of its entire business and financial affairs; shall have power to make all necessary changes in the Constitution and rules of the society; shall provide for an annual Fair or exhibition by the society of all the industries and industrial products of the State, at the City of Sacramento, and such other exhibition as they may deem important. They shall elect one of their members as President of the Board and society, and a Treasurer and Secretary, not members of the Board. They may also appoint, annually, as officers of the Board, a chemist, a botanist, a miner-

alogist, a geologist, a metallurgist, an ornithologist, and an entomologist, and define the duties of each. They may appoint such committees on the various departments of agriculture, mining, and manufactures, either generally or for specific purposes, as they may deem important for the best interests of the State, and require such committees to report the results of their investigations to the Board at such times as may be named by them.

SEC. 11. *Duties of President.*—The President shall preside at all meetings of the Board and of the society; shall have power to call special meetings of the Board when necessary, and at the written request of ten members may call extra meetings of the society; shall appoint all meetings not otherwise provided for; and shall sign all financial and official documents emanating from the society, and not otherwise provided for. In the absence of the President from any meeting of the Board or society, any Director may be called to the chair, and, during such meeting, and for the completion of any business transacted, or ordered at the same, shall have the same powers as the President.

SEC. 12. *Duties of Secretary.*—The Secretary shall conduct the correspondence of the Board or society, keeping copies of all important letters written in the name or on behalf of the Board or society, holding the same free to the inspection of any member of the Board or society, at any regular meeting of the same. He shall also receive and file all letters addressed to the Board or society, holding the same subject to the Board of Directors. He shall attend all meetings of the society and the Board, keeping a full record of the proceedings of each in a book for that purpose. He shall prepare and publish all notices of meetings, shall keep a roll of standing committees, and call the same (noticing absences) whenever desired to do so by the Chair; shall sign all certificates for honorary and corresponding and life memberships, and forward the same to those entitled to receive them. He shall keep, in a book prepared for that purpose, the name and address of every member; shall prepare and sign all gratuitous or complimentary cards or tickets of admission; shall countersign all diplomas, certificates of merit, etc., awarded by the Board, and forward the same to their respective claimants. He shall be *ex officio* Librarian; shall keep the seal and all the plates, dies, engravings, etc., belonging to the society, and shall cause to be struck therefrom such medals and impressions as may, from time to time, be required. He shall have charge of all specimens, models, plants, seeds, books, etc., and arrange, prepare, or distribute the same under the direction of the Board. He shall prepare all reports to be made by the Board to the society, and to the State. He shall receive all moneys due or payable to the society, and pay the same to the Treasurer, taking his receipt therefor; shall hold all bonds filed by officers of the society, for the faithful performance of their duty, and all vouchers for every class of expenditure. He shall countersign all drafts ordered by the Board, and all certificates of annual and life membership, and keep an account of the same in a book as they are issued, and shall, in December of each year, prepare a tabular statement of the receipts and expenditures of the Board according to the law organizing the same.

SEC. 13. *Duties of the Treasurer.*—The Treasurer shall receipt for all funds at the hands of the Secretary, and shall disburse the same only on the order of the Board, attested by the President and the Secretary. He shall also hold in trust all certificates of stock, bonds, notes, deeds, or other evidences of debt or possession belonging to the society, and shall transfer, invest, or dispose of the same only by direction of the Board. He shall file with the Secretary a bond for the faithful performance of his duties, said bond to be approved by the Board, and shall, at the annual meeting, make to the society a detailed report of all his transactions.

STANDING COMMITTEES.

SEC. 14. *Committee of Finance.*—The Committee of Finance shall consist of five members of the Board, the President being one, whose duty it shall be to audit the Secretary's and Treasurer's accounts, to examine and approve all bills before they are paid, to have general supervision of the finances of the society, and to report their transactions and financial condition of the society in full to the Board whenever called on so to do.

SEC. 15. *Library Committee.*—The Library Committee shall consist of four members of the Board, and the Secretary, whose duty it shall be to have the general supervision of the library and cabinet, to make all necessary rules and regulations for the government of the same (said rules and regulations being subject to the approval of the Board), to suggest such means for the safe-keeping and enlargement of both the library and cabinet as they may deem expedient, and to make a full report of their transactions, together with the state of the department under their charge, at each annual meeting.

SEC. 16. *Visiting Committee.*—The Visiting Committee, to be appointed by the Board from their own number, shall visit and examine all farms, orchards, vineyards, nurseries, field crops, irrigating works, agricultural machine works, agricultural machinery in operation, etc., which may be entered for competition, and which require examination at other times and places than the annual Fair; to award premiums for the same according to the schedule, and recommend such gratuities as they may deem proper, and make a full report to the Board at least one day previous to the annual Fair.

SEC. 17. *Printing and Publication Committee.*—The Committee on Printing and Publication shall consist of five (the President and Secretary being two), whose duty it shall be to contract for and superintend, under the direction of the Board, all printing and publishing necessary for the society.

OFFICE AND ROOMS.

SEC. 18. The office, rooms, library, and cabinet of the Board and society shall be permanently located at the Capital of the State.

LAWS RELATING TO DISTRICT AGRICULTURAL ASSOCIATIONS.

AN ACT

TO FORM AGRICULTURAL DISTRICTS, TO PROVIDE FOR THE ORGANIZATION OF AGRICULTURAL ASSOCIATIONS THEREIN, AND FOR THE MANAGEMENT AND CONTROL OF THE SAME BY THE STATE.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Counties of Alameda, Contra Costa, and San Francisco shall constitute Agricultural District No. 1.

SEC. 2. The Counties of San Joaquin, Calaveras, Fresno, Kern, Merced, Mariposa, Stanislaus, Tulare, and Tuolumne shall constitute Agricultural District No. 2.

SEC. 3. The Counties of Sutter, Yuba, Butte, Colusa, Tehama, Yolo, and Sacramento shall constitute Agricultural District No. 3.

SEC. 4. The Counties of Sonoma, Marin, Solano, Napa, and Lake shall constitute Agricultural District No. 4.

SEC. 5. The Counties of Santa Clara and San Mateo shall constitute Agricultural District No. 5.

SEC. 6. The Counties of Los Angeles, San Diego, San Bernardino, Santa Barbara, Ventura, and Inyo shall constitute Agricultural District No. 6.

SEC. 7. The Counties of Monterey, Santa Cruz, San Luis Obispo, and San Benito shall constitute Agricultural District No. 7.

SEC. 8. The Counties of Nevada, Placer, El Dorado, Amador, Alpine, and Mono shall constitute Agricultural District No. 8.

SEC. 9. The Counties of Mendocino, Humboldt, and Del Norte shall constitute Agricultural District No. 9.

SEC. 10. The Counties of Siskiyou, Trinity, and Shasta shall constitute Agricultural District No. 10.

SEC. 11. The Counties of Plumas, Lassen, Modoc, and Sierra shall constitute Agricultural District No. 11.

SEC. 12. Any fifty or more persons representing a majority of the counties within any one of the districts above constituted, may form an association for the improvement of the material industries within such district, and when so formed the association shall be known and designated by the name of ——— Agricultural Association, and by such name and style shall have perpetual succession, and shall have power and authority to contract and be contracted with, to sue and be sued, to have and use a common seal, to purchase and hold and lease real estate, with such buildings and improvements as may be erected thereon, and may sell and lease and dispose of the same at pleasure. The said real estate shall be used by such association for the purpose of holding exhibitions of horses, cattle, and other stock, of the agricultural, horticultural, viticultural, mechanical, manufacturing, and domestic products of such district, with view to the improvement of all the industries in the same.

SEC. 13. The officers of such association shall consist of eight Directors, who shall constitute a District Board of Agriculture for District Number ———, a President, who shall be one of their number, and a Secretary and Treasurer, not of their number.

SEC. 14. Within ten days after the formation of an agricultural association within any of the districts above constituted, in accordance with the provisions of this Act, and notice of such formation to the Governor, the Governor shall appoint eight resident citizens of such district as members of a District Board of Agriculture for said district, whose term of office shall be four years, except as hereinafter provided.

SEC. 15. Within ten days after their appointment, the persons so appointed shall qualify, as required by the Constitution, and shall meet at a place within the district, and organize by the election of one of their number President of the Board and association, who shall hold said office of President one year, and until his successor is elected; they shall also elect a Secretary and Treasurer.

SEC. 16. At the same meeting the members of the Board shall, by lot or otherwise, classify themselves into four classes of two members each. The terms of office of the first class shall expire at the end of the first fiscal year; of the second class, of the second fiscal year; of the third class, of the third fiscal year; and of the fourth class, at the end of the full term of four years. The fiscal year shall be from December first to December first.

SEC. 17. Each association so formed and organized is hereby declared and shall be recognized a State institution, and the Board so appointed and qualified shall have the exclusive control and management of such institution for and in the name of the State, and shall have the possession and care of all the property of the association, and shall fix the terms of office, and the bonds of the Secretary and Treasurer, and determine their salaries and duties. They shall have power to make all necessary by-laws, rules, and regulations for the government of the association and the management of its prudential and financial affairs. They shall provide for an annual Fair or exhibition by the association of all the industries and industrial products in the district, at such time and place as they deem advisable; *provided*, that no District Fair shall be held in any of the districts at the same time of the State Fair; *and, provided further*, that the State shall in no event be liable for any premium offered, or award, or for any debt contracted by any District Board of Agriculture or Agricultural Association.

SEC. 18. When any District Board of Agriculture shall have been classified and organized as herein provided, the Secretary of the Board shall report such classification and organization to the State Board of Agriculture; he shall also report the same to the Governor, and shall report any vacancy that may occur in the Board to the Governor, who shall fill the same by appointment for the unexpired term.

SEC. 19. All laws and parts of laws in conflict with this Act are hereby repealed.

SEC. 20. This Act shall take effect from and after its passage.

AN ACT

TO AMEND SECTIONS THREE, FOUR, NINE, AND ELEVEN OF AN ACT ENTITLED "AN ACT TO FORM AGRICULTURAL DISTRICTS, TO PROVIDE FOR THE ORGANIZATION OF AGRICULTURAL ASSOCIATIONS THEREIN, AND FOR THE MANAGEMENT AND CONTROL OF THE SAME BY THE STATE," APPROVED APRIL 15, 1880, SO AS TO CREATE TWO ADDITIONAL DISTRICTS.

[Approved March 6, 1883.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section three of the Act of which this is amendatory, entitled an Act to form agricultural districts, to provide for the organization of agricultural associations therein, and for the management and control of the same by the State, approved April fifteenth, eighteen hundred and eighty, is amended to read as follows:

Section 3. The Counties of Butte, Colusa, and Tehama shall constitute Agricultural District Number Three.

SEC. 2. Section four of said Act is amended to read as follows:

Section 4. The Counties of Sonoma, Marin, Solano, and Napa shall constitute Agricultural District Number Four.

SEC. 3. Section nine of said Act is amended to read as follows:

Section 9. The Counties of Humboldt and Del Norte shall constitute Agricultural District Number Nine.

SEC. 4. Section eleven of said Act is amended so as to read as follows:

Section 11. The Counties of Plumas, Lassen, Modoc, and Sierra shall constitute Agricultural District Number Eleven. The Counties of Mendocino and Lake shall constitute Agricultural District Number Twelve; and the Counties of Sacramento, Yolo, Yuba, and Sutter shall constitute Agricultural District Number Thirteen.

SEC. 5. This Act shall take effect immediately.

AN ACT

TO AMEND AN ACT ENTITLED "AN ACT TO FORM AGRICULTURAL DISTRICTS, TO PROVIDE FOR THE ORGANIZATION OF AGRICULTURAL ASSOCIATIONS THEREIN, AND FOR THE MANAGEMENT AND CONTROL OF THE SAME BY THE STATE," APPROVED APRIL 15, 1880.

[Approved March 9, 1885.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section eighteen of said Act is hereby amended so as to read as follows:

Section 18. When any District Board of Agriculture shall have been classified and organized as herein provided, the Secretary of the Board shall report such classification and organization to the State Board of Agriculture. He shall also report the same to the Governor, and shall report any vacancy that may occur in the Board to the Governor, who shall fill the same by appointment for the unexpired term. The Governor shall have the power and authority to remove a Director at any time for good and sufficient cause, and to appoint a Director to fill the vacancy.

SEC. 2. This Act shall take effect immediately.

AN ACT

TO AMEND SECTION EIGHT OF AN ACT ENTITLED "AN ACT TO FORM AGRICULTURAL DISTRICTS, TO PROVIDE FOR THE ORGANIZATION OF AGRICULTURAL ASSOCIATIONS THEREIN, AND FOR THE MANAGEMENT AND CONTROL OF THE SAME BY THE STATE," APPROVED APRIL 15, 1880.

[Approved March 14, 1885.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section eight of the Act recited in the title hereto is amended so as to read as follows:

Section 8. The Counties of Nevada and Placer shall constitute Agricultural District Number Seventeen; and the Counties of Alpine, Amador, El Dorado, and Mono shall constitute Agricultural District Number Eight. And the sum of three thousand dollars is hereby appropriated out of any money in the State Treasury not otherwise appropriated, for the aid of District Agricultural Society Number Seventeen, to be audited and paid the same as appropriations for other district agricultural societies.

SEC. 2. This Act shall take effect immediately.

AN ACT

TO AMEND SECTIONS TWO, FOUR, SIX, SEVEN, AND EIGHT OF "AN ACT ENTITLED AN ACT TO FORM AGRICULTURAL DISTRICTS, TO PROVIDE FOR THE ORGANIZATION OF AGRICULTURAL ASSOCIATIONS THEREIN, AND FOR THE MANAGEMENT AND CONTROL OF THE SAME BY THE STATE," APPROVED APRIL 15, 1880, SO AS TO CREATE CERTAIN ADDITIONAL DISTRICTS.

[Approved March 9, 1887.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Sections two, four, six, seven, and eight of an Act entitled "An Act to form agricultural districts, to provide for the organization of agricultural associations therein, and for the management and control of the same by the State," approved April fifteenth, eighteen hundred and eighty, is hereby amended so as to read as follows:

Section 2. The Counties of San Joaquin, Merced, Stanislaus, and Tuolumne shall constitute Agricultural District Number Two; the Counties of Tulare and Kern shall constitute Agricultural District Number Fifteen; the Counties of Merced, Mariposa, and Fresno shall constitute Agricultural District Number Twenty-one.

Section 4. The Counties of Sonoma and Marin shall constitute Agricultural District Number Four, and the Counties of Solano and Napa shall constitute Agricultural District Number Twenty-five; the Counties of Los Angeles, San Bernardino, and Ventura shall constitute Agricultural District Number Six, and the County of Santa Barbara shall constitute Agricultural District Number Nineteen.

Section 7. The Counties of Monterey and San Benito shall constitute Agricultural District Number Seven; the County of Santa Cruz shall constitute Agricultural District Number Fourteen; the County of San Luis Obispo shall constitute Agricultural District Number Sixteen.

Section 8. The Counties of Nevada and Placer shall constitute Agricultural District Number Seventeen; and the County of El Dorado shall constitute Agricultural District Number Eight; the Counties of Alpine, Inyo, and Mono shall constitute Agricultural District Number Eighteen; the Counties of Amador and Calaveras shall constitute Agricultural District Number Twenty-six.

SEC. 2. This Act shall take effect immediately.

SEC. 3. All Acts and parts of Acts in conflict with this Act are hereby repealed.

AGRICULTURAL DISTRICTS

ORGANIZED UNDER AN ACT APPROVED APRIL 15, 1880, AND AMENDED
MARCH 6, 1883; MARCH 14, 1885; MARCH 9, 1887.

No. 1. The Counties of Alameda, Contra Costa, and San Francisco shall constitute Agricultural District No. 1.

No. 2. The Counties of San Joaquin, Merced, Stanislaus, and Tuolumne shall constitute Agricultural District No. 2.

No. 3. The Counties of Butte, Colusa, and Tehama shall constitute Agricultural District No. 3.

No. 4. The Counties of Sonoma and Marin shall constitute Agricultural District No. 4.

No. 5. The Counties of Santa Clara and San Mateo shall constitute Agricultural District No. 5.

No. 6. The Counties of Los Angeles, San Bernardino, and Ventura shall constitute Agricultural District No. 6.

No. 7. The Counties of Monterey and San Benito shall constitute Agricultural District No. 7.

No. 8. The County of El Dorado shall constitute Agricultural District No. 8.

No. 9. The Counties of Humboldt and Del Norte shall constitute Agricultural District No. 9.

No. 10. The Counties of Siskiyou, Trinity, and Shasta shall constitute Agricultural District No. 10.

No. 11. The Counties of Plumas, Lassen, Modoc, and Sierra shall constitute Agricultural District No. 11.

No. 12. The Counties of Mendocino and Lake shall constitute Agricultural District No. 12.

No. 13. The Counties of Sacramento, Yolo, Yuba, and Sutter shall constitute Agricultural District No. 13.

No. 14. The County of Santa Cruz shall constitute Agricultural District No. 14.

No. 15. The Counties of Tulare and Kern shall constitute Agricultural District No. 15.

No. 16. The County of San Luis Obispo shall constitute Agricultural District No. 16.

No. 17. The Counties of Placer and Nevada shall constitute Agricultural District No. 17.

No. 18. The Counties of Alpine, Inyo, and Mono shall constitute Agricultural District No. 18.

No. 19. The County of Santa Barbara shall constitute Agricultural District No. 19.

No. 21. The Counties of Merced, Mariposa, and Fresno shall constitute Agricultural District No. 21.

No. 25. The Counties of Solano and Napa shall constitute Agricultural District No. 25.

No. 26. The Counties of Amador and Calaveras shall constitute Agricultural District No. 26.

REPORT.

OFFICE OF THE STATE BOARD OF AGRICULTURE, }
SACRAMENTO, February 1, 1888. }

His Excellency, R. W. WATERMAN, Governor of California:

SIR: Another year has terminated, and as we are required to render an account of our transactions during the past twelve months, herewith hand you a complete review for that period.

Here also will be found the reports of the various District Boards of Agriculture, the financial statements of the Directors thereof, as well as several able papers read and addresses delivered at the exhibitions held by these organizations during the past year. That portion of the report relating to the State Board, includes the usual statistical matter, and the financial transactions; also, several able papers submitted by prominent citizens having the welfare of the State at heart, and are thus willing to publish the results of experiments by them made for the benefit of the new beginner. Their actions in this respect are most gratifying to the Board of Directors, and should receive more than a passing notice. If more of our citizens would emulate this example, and show a spirit of willingness to assist the newcomer in the various arts of agriculture that experience has made them perfect in, we are positive that the encouragement would be most acceptable, and where failures now occur successes would result.

ANNUAL EXHIBITIONS.

Occasionally we receive communications from foreign lands, inquiring if our system of annual exhibitions is looked upon as beneficial to the general public; also, if our system of District Agricultural Associations is found to be of assistance to the State exhibition. To queries of this character, we have answered in the main: that we think our system is most beneficial and prolific of much good, as "competition is the life of trade." Hence, we argue that all efforts of this kind encourages the producer to make an unusual attempt to excel in the arts of agriculture and trade. Our breeders of live stock have achieved great success, so also have those engaged in other productive industries.

We certainly believe that showing these successes to the world not only tends to stimulate trade, but likewise encourages the home-seeker to locate among us, and use every possible energy to excel in the pursuit followed.

The immense advantages of our fruit-producing sections have been more fully shown by this course than by any other, and the marked increase each year in the quality of our productions satisfies us that our system of annual exhibitions has had the desired effect.

Our intent is to encourage the producer to bring forth superior fruit, whether of growth or labor, and to urge the consumer to purchase the best, consequently our aims in both directions are effective.

The benefits of the district associations are the same applied to their respective localities. In addition to which they are most important factors

to the success of the State exhibition. An exhibitor who is successful at his District Fair has little hesitancy to visit and make his display at the State Fair. This enables the purchaser and consumer to view the best animals or articles from all portions of the State; therefore the advantages gained by having these numerous feeders are quite apparent, and insures to a great extent an exhibition composed in part of the prize-winners from all sections of the State.

The exhibitions held each year under the auspices of this Board are increasing in character, attendance, and returns. They are, in fact, assuming international importance, especially in the live stock department: improved breeds are being imported each season for exhibition from other States, and the various breeders of this State realize the fact that every improvement made by the crossing of new blood increases returns and adds value to their herds. As a consequence foreign exhibits with proper precautions are encouraged.

The display of agricultural products in the exhibition made by counties at the State Fair of 1887 surpassed, in point of excellence, any previous attempt heretofore made. The heavy heads of grain and plump apples from Tehama; the orange, lemon, and juicy peach from Yuba and Sutter; the mammoth grapes, apricots, and pears from Placer; the plump heads of grain and grand collection of fruit from Colusa; the varied and rich products of field, tree, and vine from Solano; the timber and fruit from Humboldt; the excellent display of mountain apples, pears, peaches, and plums from El Dorado and Nevada; while San Joaquin and Sacramento's display also embraced every known product of the soil; made pyramids of the necessities and luxuries of life that would challenge more than any other one State in the Union to equal.

The effect was most dazzling, and reflected much credit on the committees in charge of the exhibits of the counties named.

It is such displays that we desire to encourage. It is the results that are sure to follow that remunerates us for all our trouble and expense.

In the report of the Committee of Awards on County Exhibits, to be found further on, a more extended review is made of the orchards, vineyards, gardens, farms, forges, and mills, the products of which were so extensive, varied, and of such excellence, they felt impelled to make an extended report upon the exhibit of each county, and upon the county itself, the advantages offered the home-seeker, and the possibilities which it has for further development.

They preface this report upon the counties and their exhibits, by a general description of California, particularly the climatic contrasts it presents to the country on the same parallel east of the Sierras. From these peculiarities of climate they point out the exceptional products of the State—products which can be grown nowhere else in the United States.

They give the figures of the amounts, and values of the imports of semi-tropic products, and show that California can produce enough to supply the demand of the whole country, and more, if necessary.

They review the history of agriculture in this State, and show that a great revolution is rapidly but quietly taking place, whereby the larger land holdings are breaking up, and being sold, as predicted in another part of this report, in small tracts to families that are seeking homes, where they can till the soil three hundred and sixty days in each year, and reap the result of their labor with less output than anywhere else in the civilized world. It is here, they say, that the blanket-carrying tramp laborer is being driven out, and his place supplied by laborers who own the land they till.

Their report is replete with facts of interest to the State, and with information of great value to those seeking homes among us.

In the exhibition each year of county products, all necessary encouragement is given to the producer: an interest of competition is awakened that is productive of much good, and the advantages of every section of the State most fully shown.

The result of this is the impulse it gives the newcomer to follow the example before him, and instead of laggard ways about the farms, life and animation is given, improving the appearance, and adding attractiveness and value. As a result, the extensive grain fields that have in the past been thought of only as such, will be transformed into paying orchards, vineyards, and garden spots, thereby creating an increased demand for good land throughout the State, and the building up of a happy and prosperous community.

This demand has already caused an increase in values, and owners have awakened to the fact that land that will sell for \$100 per acre is most too valuable for wheat growing, and as a consequence are disposing of such land to those who desire to engage in fruit growing.

The result is most remunerative to the landholder, and beneficial to the State, as it fully demonstrates the fertility of our soil, and is conclusive proof that the greater part of our State is adapted to the growth of all kinds of fruit, and that land heretofore considered wild can be utilized for grain.

The display made each year in the Agricultural Machinery Department is most interesting. It is here all kinds of modern improvements can be seen, and the purchaser is educated up in the uses of improved utensils, whether farming or household.

THE STATE APPROPRIATION.

Claims have been made by unscrupulous and designing persons that improper uses were made of "the people's money."

It would not be out of place, under this head, to show by facts and figures to what uses the appropriations made each year by the Legislature is put.

It has always been the aim of this Board to apply the appropriation to the payment of premiums, and care of the State Exhibition Building.

By reference to past reports it will be seen that it has been applied to those purposes.

In the year just closed our—

Premiums paid (exclusive of racing) amounted to.....	\$14,538 92
Insurance of building	1,000 00
Watchmen (two)	1,500 00
Total	\$17,038 92

The appropriation was \$17,500. Thus it will be seen that the amount paid out, as heretofore stated, nearly equals the appropriation, to say nothing of the expenses attendant.

As our appropriations increased, the premiums increased in the same ratio. We desire to call your especial attention to these facts, that you may fully understand that not one cent of the money appropriated by the State is squandered, but on the contrary, placed back into the hands from whence it came, after having performed a service to the State.

IMMIGRATION.

As many as sixty letters have been received in one month, by the Secretary of this Board, from residents of States east of the Rocky Mountains, and of foreign countries, seeking information about the climate and fertility of the soil of California.

We answer all queries of a specific nature, and mail our reports, and such other printed matter at hand that gives information in general as to the productiveness and climate of our State.

A large majority of these communications are from parties who contemplate making this State their future home, and facts are asked respecting the cultivation of small tracts of land. To these we give such information as we are possessed of, and, judging from the apparent reduction in the acreage of land cultivated in grain, we are of the opinion that the cutting up of large tracts of grain land has already begun, and the subdivisions set out to fruit and vines by the newcomers.

The yield of wheat for 1887, in round numbers, was twenty-six million bushels, as against thirty-nine millions in 1886, and the same causes for a short yield prevailed both seasons, viz.: the damaging north wind, at a period of maturity which most affects the grain. It is clearly perceptible to us that the growing of wheat is gradually giving way to other agricultural products. This fact should be most encouraging, as better prices will be the result, and the increased area planted to fruit cannot equal the constantly increasing demand.

We have maintained for years past that this era would arrive, and that diversified crops would prove of more benefit to the grower as well as to the public at large. Experience has demonstrated this fact, and we are pleased to note it is being practiced with good effect.

Tree and vine planting should be encouraged in every way. For our green fruits we have the population of the United States to furnish, and they stand ready to take all that we can ship at prices that are certainly more remunerative, on an average, than those obtained for other commodities grown.

Then again, the industry of canning and drying presents a plan for caring for any glut that may be caused by any contingency. This industry opens to us the market of the world, and creates a demand in all countries.

Take our product of raisins alone, for the year just ended. We find there has been cured eight hundred thousand boxes, or sixteen million pounds, with a very small acreage to raisins. This is an increase of one hundred thousand boxes over 1886. Has the trade been affected? Not in the least. Why? Because the demand is far ahead of the supply, and will so continue.

Many applicants for information have asked for details, as to cost of production and the possible returns from a small tract of land set to raise grapes. To such have been sent the following statement, which is herein incorporated for information of the future applicant.

This statement is based on first quality land:

Cost—10 acres @ \$100 per acre	\$1,000 00
Vines—8,000 cuttings @ \$5 per thousand	40 00
Plowing and harrowing, \$10 per acre	100 00
Laying out and planting, \$2 50 per acre	25 00
Care and cultivation the first year	40 00
Total output the first year	\$1,205 00

Care and cultivation second year.....	\$100 00
Care and cultivation third year.....	110 00
Care and cultivation fourth year.....	125 00
Care and cultivation fifth year.....	125 00
Care and cultivation sixth year.....	125 00
Total for six years.....	\$1,790 00

This ten acres will produce:

The third year, 500 boxes @ \$1 60.....	\$800 00
The fourth year, 1,500 boxes @ \$1 60.....	2,400 00
The fifth year, 2,000 boxes @ \$1 60.....	3,200 00
The sixth year, 2,500 boxes @ \$1 60.....	4,000 00
Total.....	\$10,400 00
Deduct for handling and packing, 25 cents per box.....	\$1,625 00
Deduct cost of land and expenses.....	1,790 00
	3,415 00
Leaving a net profit of.....	\$6,985 00

Thus it will be seen that a man can start on good land, with almost nothing, and at the end of six years have his land paid for, and a net profit of \$116 40 per acre per annum.

As another illustration of what can be accomplished on a small tract of land in California, we will cite a case with figures furnished us by the trustees of an estate held in trust for a period of five years. This was afterwards published in the daily press, but is here given for information of non-residents.

During this period (five years) there was cultivated about forty acres of land, half in asparagus, and half in Bartlett pears. The total receipts from sales were \$56,000. The taxes, labor, farm, and household expenses for the five years amounted to \$25,000. Deducting this from the amount of sales, leaves the handsome balance of \$31,000, or \$155 per acre per annum net profit.

This tract of land is within the city limits of Sacramento, and the taxes were therefore higher than on outside land; but the value of the land has doubled during this time. The sales of these products were not made at retail, but to wholesale dealers, who shipped to San Francisco and eastern points.

SUGAR BEETS.

The subject of sugar-beet culture in this State has long been a matter of consideration, and encouragement, by this Board.

In 1884 we extended an invitation to Professor H. W. Wiley, chemist of the United States Department of Agriculture, to favor this coast with an official visit, and talk to our people of sorghum and sugar-beet culture.

In December of that year Professor Wiley paid this State a visit, and delivered an address before the State Board of Agriculture, on "Northern Sugar Industry," wherein he stated that his visit to the coast was chiefly to investigate the question above referred to.

He encouraged the further development of our natural resources for the production of the sugar beet, claiming that a large portion of the Sacramento and San Joaquin Valleys came within the isothermal lines, showing the temperature to be so nearly equal as to be peculiarly beneficial to the growth of beets.

The entire production of beet sugar in 1883-4 was manufactured at Alvarado, Alameda County, California. In 1883 one million two hundred and fifty thousand pounds was here made, and the cultivation of beets in

the neighborhood was most successful; that year the farmers there raised from thirty to forty tons to the acre, of the very best quality, and there are thousands of acres in this State equally susceptible to the growth of this product.

Superintendent Dyer, of the Standard Sugar Refinery, referring to this subject in a letter to the Secretary of the Board, at the time of Professor Wiley's visit, said:

I will state that this is the sixth campaign of the Standard Sugar Refinery; that we have never failed to earn fair interest on our investment during the six years we have been in operation; that the stock of our company is to-day worth par, and none can be bought at that rate, that I know of; that California produces as good beets as are produced in any country; that we obtain as large percentage of white refined sugar in less than thirty-six hours from the time the beets are received in the refinery than is obtained in Europe in crude sugar in one year; that beets can be raised per ton on this coast as cheaply as in Germany or France, and are as rich in saccharine; that we have a longer season for planting, harvesting, and manufacturing, than in either of those countries; that we have already worked the present season six thousand or seven thousand tons of beets, and have at this writing about twenty thousand tons stored in our yards and sheds; that these beets will produce over four million pounds of white, refined sugar, being a yield of from three thousand to six thousand pounds of sugar per acre, exceeding the average yield of the best cane lands in the world; that we are manufacturing this sugar at a cost of about 5 cents a pound, laid down in San Francisco in barrels; that with improved machinery the cost of manufacture could be reduced fully 1 cent a pound; that all that is required to produce all the sugar consumed in the United States, on the Pacific Coast, is capital, enterprise, and technical skill.

The statements in this letter were fully indorsed by Professor Wiley, who was warm in his praises of our climate and soil. He said he was positive that the time would come when sugar-beet growing would be one of the leading agricultural industries of our State; and this prediction promises to be fulfilled, as new life has been given this industry through the enterprise of Mr. Claus Spreckels, the leading manufacturer of sugar in California, whereby another commodity can be added to our variety of crops, so that rotation may be had with benefit to the land and producer as well.

The meager facilities and bad management of many experiments heretofore made in the manufacture of sugar from this agricultural product, has so retarded the industry as to confine the growing of beets to almost one locality, where the factory would be inadequate to make use of any increased yield.

The recently discovered improvements in the machinery for manufacturing sugar from beets has given this industry an impetus that will be thoroughly appreciated by the farming community of the State. Create the demand for all kinds of agricultural products, say they, and we will insure the supply in such quantity as needed, relying upon the soil of our State for its production.

We publish herein the circular issued by Mr. Spreckels, upon the subject of beet culture, which will be of interest to those who desire to add this product to their resources.

FRUIT GROWING AND SHIPPING.

The past season has proved a very satisfactory one to the average fruit grower. Less dependence has been placed on local markets as the consumers of large quantities in a green state, and more has been shipped East, or dried, than in any previous year.

According to figures furnished us by the railroad company, some one thousand seven hundred cars of green deciduous fruits have been transported by them during the shipping season. It is a matter of surprise to

our eastern brethren to learn that this period is of only six months' duration—the first car this last season leaving May eighteenth, and the last November twenty-fourth.

The showing of one thousand seven hundred cars this year over the shipment of last is a very creditable increase, being a gain of nearly three hundred cars.

While more fruit has been sent out in a green state, at the same time our driers and canners have taken largely increased quantities at reasonably fair prices, and have been so fortunate in placing the result of their season's work on the market—it being a well known fact that there is very little stock now on hand—that from all sides we learn of new canneries being started, while established ones are largely increasing their capacity. What better evidence have we of the increase of acreage, and that this State is rightfully named the "garden spot of the world?"

With the increased supply comes additional methods for its care. It is not incumbent upon the producer to sell his fruit in a green state: let him set up a drier of the capacity needed—this can be done at a nominal cost—and dry his fruit. Then he not only increases the industry, but becomes master of the situation. The prices of dried fruit can stand a very perceptible reduction. Any fruit grower that has dried his product this season cannot fail to be pleased with the result, as during the season prices for dried fruit of all varieties have ruled *remarkably* high. In fact, to an impartial observer, it would seem they are most too high, from the fact that dried fruit is consumed in a large measure by the middle classes. When eastern commission houses pay 22 to 24 cents per pound *here* for fancy peeled peaches, to which must be added cost of transportation and the commission merchant's profit, it would seem as though the price would soon run up so high as to be almost prohibitory, so that we would much prefer to see *fair living* prices, and these maintained, than the gilt-edged ones of the past season.

The season just closed has seen a new departure in fruit shipping. While before we have been content to allow the extreme eastern cities to draw their supplies chiefly from Chicago, the experiment has, this year, been tried in shipping direct carload lots to the Atlantic seaboard, and the result has been highly satisfactory. While Boston, for the season of 1886, received but one half a carload per week on an average, and New York during the same period but one carload, during the season of 1887 these two cities have received, and in most instances profitably disposed of, one hundred and thirty-one carloads.

The manner of handling the fruit so sent might be a matter of interest to many, from the fact that a departure has been made from the old established method of the commission business, and all the fruit in these two cities has been sold this season at auction. This method has for many years been used in handling Mediterranean citrus fruits, but it was left to the wide awake Californians to apply its principles in disposing of the highly perishable deciduous fruits.

Many of our growers at the opening of the season greatly doubted the feasibility of the plan; some few thought that after successive seasons it might be made to work, while a very few were its enthusiastic supporters.

The success of this new departure is mainly due to the efforts of the California Fruit Union, and the result is most commendable to their energy.

The peculiarities of this method being that within seven days of the date of loading, when shipping to even the most distant market, the shipper knows exactly what his fruit is bringing, and can determine whether

he desires to send more or not. He knows that on the "account sales" he will find no such notation as "Lost in repacking," but every box will be accounted for. From the fact that the fruit is sold by sample he is confident that he will be well repaid for any extra labor he may expend, or any unusual care he may use in selecting nothing but the finest fruit. While instead of waiting from three weeks to three months for his money, without an exception he receives it, when sold under the plan above referred to, in fifteen days from the time his fruit leaves the station. These facts will always cause this manner of selling fruit to be popular with the growers, and will in time cause its adoption in all eastern markets.

As to freight rates, we are inclined to the opinion that as the traffic increases the rates will be so adjusted as will be acceptable to all, and that in the adjustment the overland railroad companies will give such figures as will encourage the planting of trees, and use the same energy they did to induce immigration to the coast, realizing that the prosperity of these people, as well as their own, depends upon the facilities for transportation to the millions left behind, the products of our ever fruitful soil.

It is but fitting that the California Fruit Union with its seven hundred members, comprising the leading growers and shippers north of Tehachapi Pass, should take this work in hand and make it their particular study.

As anticipated in the report of 1886, the growers and shippers have this season worked together, and the result has been highly satisfactory. From the revenue derived the Trustees of the Fruit Union can pay a six per cent dividend on stock, and then find themselves much in the predicament that our National Government seems now to be—a surplus on hand, and the question is, what to do with it?

The probable solution will be that the moneys on hand will be used in developing new territory and paving the way for the successful handling of the output of the thousands of acres of orchard and vineyard property yet to come into bearing.

The completion of the California and Oregon line of railroad has opened to us the markets of the great northwest. The demand from these increased transportation facilities will tax our acreage of cultivated lands to their utmost. Consequently the improvement of land must be kept abreast with the improvements of market facilities, and the cry of "over-production" that comes from those who began operations at such times when the facilities for marketing our products were in their infancy, must not at this progressive period be heeded.

THE WHEAT CROP.

The season of 1887 opened with a promise of good results. In April the crops were far advanced, much more so than in 1886 at the same time; no disaster of general effect had overtaken the grain or fruit crops, and every-thing pointed to a most successful year.

The acreage in grain was less than the preceding year, but from appearances on all sides, it was believed at this time, the yield would exceed that of 1886. As the month of April passed on, it was thought that the unusual advancement in growth of our wheat would place it near enough maturity at the time we are usually visited by the greatest enemy this industry has in this State, namely, the hot, dry, north wind that usually visits us about the first of June, when our large and promising grain yield is generally changed in twenty-four hours, so as to cause from twenty-five to fifty per cent loss.

Our estimates, however, proved wholly at fault, as about the time the growing wheat reached the stage it was most susceptible to damage from its most powerful enemy, it came, although nearly thirty days before its usual appearance, and as the growing crops had advanced nearly that much, it came over them at about the same period of maturity as it did last season, and much damage was done in the large grain growing sections.

From the most accurate information to be had, since harvest, we have placed the yield of wheat in this State for 1887 at twenty-six million bushels. Prior to the appearance of the devastating winds, that came this season early in May, estimates by competent persons placed the yield at from thirty-five million to forty million bushels, and judging from the appearance of the grain in the fields, at that period, we think the figures were not exaggerated.

Prices, however, from this time on through harvest were far in excess of the usual figures, occasioned, not by any report of the condition of crops, but by the speculative spirit that suddenly pervaded the wheat market and proved so disastrous to many of the large operators, but was a boon and benefit of no small degree, for the time, to the fortunate producer who took advantage of the sudden inflation and gathered in his shekels upon delivery of his wheat.

The losses, when the crash came, were principally confined to those who had jumped into the vortex of speculation and were carried down in the swim. Happily the number of real producers borne down was comparatively small.

Farther on will be found a complete statistical record of the fluctuations of prices in the market during that period, as well as the statement of exports of wheat and flour from San Francisco during the year, together with the table showing amount on hand at the commencement of 1888. For this valuable matter we are again indebted to Mr. T. C. Friedlander, the obliging Secretary of the San Francisco Produce Exchange.

METEOROLOGICAL.

The meteorological department of our society has grown so rapidly during the last three years, that it is now desirable to have it in charge of an observer, under the direct supervision of the State Board of Agriculture, for reasons hereinafter given.

The history of this department dates back to the birth of the society. That we are the promoters of it from inception, you have but to refer to past reports for verification. For many years prior to his demise, Dr. T. M. Logan furnished the valuable data published in the early reports of this society, and referred principally to San Francisco, Sacramento, and a few other points. After the death of Dr. Logan, in 1875, this department deteriorated, and fell back to almost nothing—that is for a period of several years—during which time no statistics were published in the annual reports of this society.

The United States Signal Office was first established in Sacramento in 1877, but from some cause no data was furnished from that office until Sergeant Barwick was placed in charge in 1881. For that year, climatic statistics covering several pages were furnished by Sergeant Barwick for our annual report. After which, Sergeant Barwick was duly elected State Meteorologist by this Board, and since that time our meteorological statistics have grown from a few pages, until they embraced nearly two hundred in the report of 1886, and from a mere local report in 1881, to a general one

for all portions of the State where data can be obtained; and for the first time in the history of this society, the issue of its annual report was exhausted before the report for the succeeding year was ready. This was mainly due to the increased value of the report in this department, so ably managed by Sergeant James A. Barwick, and it now entails on him considerable extra work performed out of his official hours, without pay (the officer being prohibited, under the Signal Service restrictions, from receiving any remuneration other than his salary from the government).

Owing to the increased interest taken by this Board in the publication of these valuable statistics, the demand for our report is made by the various universities, colleges, and scientific institutions throughout the civilized world.

The interest taken by all in the collection and distribution of this kind of data, should be of sufficient importance to the members of the next Legislature to incorporate a system of State weather service, to be under the management and supervision of the State Board of Agriculture, as it would certainly be more economical than if organized in a separate bureau. And there should be printed thousands of copies of State meteorological reports for free distribution in the Eastern States, instead of the few hundred now issued. These reports could be printed in a neat leaflet form, easy for transmission through the mails.

Another benefit also to be derived from a State weather service would be the issuance of a weekly or monthly bulletin of the condition of the weather in every county of the State. This pamphlet could be made nearly if not quite self-sustaining by permitting advertisements, and distributing it throughout the great agricultural and horticultural districts of our State, and inviting correspondence on the weekly or monthly condition of crops, etc. We would advocate a weekly issue of this paper for the benefit of merchants and other residents of the cities and towns, as this class of our citizens cannot be kept better enlightened on the condition of all crops at short intervals from a responsible source. There are between twenty-five and thirty States in the Union that now have a similar system of State weather service, and we have several of their publications at hand that show considerable care and attention in their arrangement.

We of California are trying to show and verify to the world that we have (which fact is known to us all) the best climate that the sun ever shown on, and in what manner can we better develop and show to the outside world the glorious climate, sunshining days, and healthfulness, as well as the general climatic condition of the State, than by the method herein suggested.

It can be verified that we have from seventy-five to one hundred and fifty more clear days than any other part of the world.

The State weather service, if encouraged by an appropriation and organization by the Legislature, could begin operations with fully one hundred stations; the instruments to equip the same would not cost to exceed \$20 for each station, or say about \$2,000 for the entire number. After once equipped with first class instruments, the cost of maintaining them would be nominal. There would be no pay attached to the office of observer, as we would select in each locality such persons only that would take an interest in meteorology, and for the use of the instruments would be glad to take the observations and make reports at stated intervals of the climatic condition of the neighborhood, and not be compelled to take it from the memory of the oldest inhabitant either. \$2,000 for instruments; \$1,000 for incidental expenses in establishing stations; \$1,800 per year for pay of the officer in charge of the service, and \$500 per year for replacing and

repairing instruments. And by having the printing done by the State Office would require but \$5,300 for the first year.

After that an annual appropriation of about \$4,000 would maintain and give to the people of this State a first-class weather service. In case the United States Government would furnish an officer of the Chief Signal Office, to take charge of the service, then \$3,000 per year would be sufficient amount for the service. This would cover the pay of an assistant to the Signal Officer also. The Government officer is not permitted to accept any other position or pay for what service he would give. It has all been thus far gratuitous on the part of Sergeant Barwick, nor would he accept any remuneration; but is willing to lend all aid possible in the establishment and maintenance of the State system.

We merely give herein an outline of the work to be done, which is respectfully submitted to your Excellency for consideration, with the hope that you will earnestly impress upon the next Legislature the necessity of the State having such service in every department that will give to our citizens such aid towards improving the system of information on all points relating to agriculture.

We certainly need the service above referred to much more than do the States of Michigan or Minnesota, whose climate during the winter period is not very desirable to blazon to the world as one of salubrity or sunshine.

QUARANTINE LAWS.

We desire at this time to invite the attention of your Excellency to the necessity of advising the passage of necessary quarantine restrictions by the Legislature on all importations of live stock to this coast.

The Department of Agriculture at Washington are asking the hearty coöperation of each State in their efforts to suppress and extirpate pleuropneumonia and other contagious diseases among domestic animals. It is highly essential that the necessary safeguards should be thrown out to prevent the importation of cattle afflicted with diseases that would spread contagion among our vast herds of horned stock. The full text of the law passed by several States, with the view of coöperating with the U. S. Department of Agriculture in the suppression and extirpation of pleuropneumonia, will be found further on in this report.

OTHER MATTERS.

In accordance with our usual custom to invite representative citizens from abroad to visit the State Fair, we extended a cordial invitation to the Veteran Firemen of New York to so arrange their contemplated visit as to arrive in Sacramento during the progress of the State Fair. The invitation was accepted, and the visit made by about two hundred and fifty of the organization, which embraced many of the representative citizens of New York, who came on this trip of recreation and pleasure to view this land of plenty.

The interesting exhibit of agricultural products presented to their view was a most successful object lesson, and fully demonstrated the capability of California to produce every variety of fruit, vegetables, and grain, and from the expressions of surprise and gratification heard, we are positive the display exceeded their expectations.

The great benefit derived by the State by an opportunity of this kind is incalculable, and if an excursion each year was arranged to arrive from the East during the progress of the State Fair, much more could be ac-

complied in the way of convincing the home-seeker what can be grown here than by any other method advanced.

Our building and improvements this year cost nearly \$3,000, and included the building of a new sidewalk the entire length of the property under our control on H Street, the remodeling and building of additional stabling at the Park, and repairing of the roof of the Exhibition Building, with a view of abating the leakages through the skylights.

It is our purpose, as finances will permit, to make improvements each year at the Park, to the end that the arrangements for the accommodation of the public will be in keeping with the importance of the institution.

INDEBTEDNESS.

It is with much pride that we point to our balance sheet for the year of 1887. The reduction made in our indebtedness exceeded our expectations. At the commencement of the year our bills payable account was as follows:

National Bank of D. O. Mills & Co.	\$22,983 29
Occident stakes	1,710 00
Running stakes	50 00
	<hr/>
	\$24,743 29

Our assets were :

Cash.....	\$541 81
Entrances due	1,625 00
	<hr/>
	2,166 81
Leaving net indebtedness.....	<hr/>
	\$22,576 48

At the end of the fiscal year we find our balance sheet shows :

LIABILITIES.

D. O. Mills & Co.	\$6,648 43
Occident stakes	2,040 00
Running stakes	90 00
	<hr/>
	\$8,778 43

ASSETS.

Entrances due	\$1,855 00
Bills receivable	546 00
Cash.....	409 15
	<hr/>
	\$2,810 15
Net indebtedness.....	<hr/>
	\$5,968 28

Showing the net gain for 1887 to be as follows:

Liabilities, February 1, 1887.....	\$22,576 48
Liabilities, February 1, 1888.....	5,968 28
	<hr/>
Net gain for 1887	\$16,608 20

RESUMÉ.

We are pleased to say that the season of 1887 has been most prolific; the patronage we received from the public exceedingly gratifying; and the annual exhibition made up by the various exhibitors was commendable to their enterprise, energy, and business tact.

The large reduction made in our indebtedness causes us to be grateful

in the extreme, and mindful of the fact that we have performed our share of public work in such manner as will give us encouragement to begin the season of 1888 with renewed vigor, believing that our course in the past has been right, and our reward is the showing made.

By reference to our financial statement annexed hereto will be found the receipts and disbursements in detail, to which we invite inspection.

FINANCIAL SUMMARY.

Amount on hand at commencement of the year	\$541 81
Total receipts from all sources	86,652 73
	<hr/>
	\$87,194 54
Total disbursements	\$86,785 39
Cash on hand	409 15
	<hr/>
	\$87,194 54

EDWIN F. SMITH,
Secretary.

L. U. SHIPPEE,
President.

FINANCIAL STATEMENT.

FEBRUARY 1, 1887, TO JANUARY 31, 1888.

SUMMARY.

RECEIPTS.

1887.			
Feb. 1—	Cash on hand.....		\$541 81
	Occident Stakes, 1888-9-90.....	\$1,030 00	
	Race entries and forfeits.....	16,940 00	
	Running Declarations, account 1888.....	70 00	
	Rent of Park.....	4,152 00	
	Park and Pavilion receipts.....	44,453 65	
	Premiums—State warrant and rebate.....	17,515 00	
	Expense, account sales hay, etc.....	258 65	
	Entrances due, account collections.....	85 00	
	D. O. Mills & Co., overdraft.....	2,148 43	
			\$86,652 73
	Total receipts.....		<u>\$87,194 54</u>

DISBURSEMENTS.

Advertising.....	\$1,662 35	
Building and improvements.....	2,700 04	
Premiums paid.....	14,538 92	
Expense account.....	16,756 78	
Insurance.....	1,438 55	
Interest.....	1,397 61	
Salaries.....	4,718 85	
Entrances due, account 1887.....	315 00	
Occident Stake, 1887, account collections made 1885-86.....	700 00	
California Annual Stake, collections made 1886.....	30 00	
Races—Purses, stakes, and added money.....	23,470 00	
Park and Pavilion receipt, rebate.....	28 00	
Bills payable—account note of D. O. Mills & Co.....	17,500 00	
D. O. Mills & Co., account of overdraft of 1886.....	983 29	
Bills receivable.....	546 00	
Cash on hand February 1, 1888.....	409 15	
		<u>\$87,194 54</u>

RECEIPTS.

1887.			
Feb. 1—	Cash on hand.....		\$541 81
	<i>Occident Stakes.</i>		
	For 1888.....	\$265 00	
	For 1889.....	295 00	
	For 1890.....	470 00	
			\$1,030 00
	<i>Running Stakes.</i>		
	Declarations for 1888.....	\$70 00	
			\$70 00
	<i>Races.</i>		
	Race No. 1—Entrances and forfeits.....	\$875 00	
	Race No. 2—Entrances and forfeits.....	1,100 00	
	Race No. 3—Entrances and forfeits.....	660 00	
	Race No. 4—Entrances and forfeits.....	240 00	
	Amount carried forward.....	\$2,875 00	\$1,641 81

Amount brought forward	\$2,875 00	\$1,641 81
Race No. 5—Entrances and forfeits	350 00	
Race No. 6—Entrances and forfeits	150 00	
Race No. 7—Entrances and forfeits	125 00	
Race No. 8—Entrances and forfeits	450 00	
Race No. 9—Entrances and forfeits	1,500 00	
Race No. 10—Entrances and forfeits	250 00	
Race No. 11—Entrances and forfeits	500 00	
Race No. 12—Entrances and forfeits	580 00	
Race No. 13—Entrances and forfeits	780 00	
Race No. 14—Entrances and forfeits	605 00	
Race No. 15—Entrances and forfeits	750 00	
Race No. 16—Entrances and forfeits	640 00	
Race No. 17—Entrances and forfeits	480 00	
Race No. 18—Entrances and forfeits	200 00	
Race No. 19—Entrances and forfeits	400 00	
Race No. 20—Entrances and forfeits	250 00	
Race No. 21—Entrances and forfeits	360 00	
Race No. 22—Entrances and forfeits	1,000 00	
Race No. 23—Entrances and forfeits	700 00	
Race No. 24—Entrances and forfeits	480 00	
Race No. 25—Entrances and forfeits	300 00	
Race No. 26—Entrances and forfeits	275 00	
Race No. 27—Entrances and forfeits	240 00	
Race No. 28—Entrances and forfeits	390 00	
Race No. 29—Entrances and forfeits	150 00	
Race No. 30—Entrances and forfeits	450 00	
Race No. 31—Entrances and forfeits	450 00	
Race No. 32—Entrances and forfeits	600 00	
Special No. 1—Entrances and forfeits	200 00	
Special No. 2—Entrances and forfeits	160 00	
Special No. 3—Entrances and forfeits	300 00	

 \$16,940 00
Rent.

Rent of Park for twelve months	\$4,152 00	\$4,152 00
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Park and Pavilion Receipts.

1887.		
June 30—Printing and Pavilion privileges		\$881 00
July 31—Life membership, D. J. Mannix	\$50 00	
Aug. 31—Life membership, Theodore Blauth	50 00	
Life membership, H. Vaughan	50 00	
Sept. 10—Life membership, A. H. Rott	50 00	
Life membership, W. E. Gerber	50 00	
12—Life membership, S. B. Smith	50 00	
Life membership, J. M. Henderson, Jr.	50 00	
14—Life membership, C. A. Fisk	50 00	
Life membership, C. F. Gardner	50 00	
Life membership, E. H. McKee	50 00	
Life membership, H. A. Kidder	50 00	
Life membership, M. E. Hornlein	50 00	
Life membership, P. H. Menken	50 00	
Life membership, Andrew Smith	50 00	
Life membership, A. L. Frost	50 00	
16—Life membership, P. Beckendorf	50 00	
Life membership, L. J. Nicolaus	50 00	
Life membership, H. C. Ross	50 00	
17—Life membership, J. C. Wolfskill	50 00	
Life membership, B. F. Rush	50 00	
Life membership, Joseph Heintz	50 00	
19—Life membership, J. H. Beach	50 00	
28—Life membership, James McNasser	50 00	
Sept. 12—Double season tickets	\$1,330 00	
13—Double season tickets	1,530 00	
14—Double season tickets	2,725 00	
15—Double season tickets	565 00	
16—Double season tickets	290 00	
17—Double season tickets	230 00	
19—Double season tickets	385 00	
20—Double season tickets	220 00	
21—Double season tickets	140 00	
Amount carried forward	\$7,415 00	\$24,764 81

	Amount brought forward	\$7,415 00	\$24,764 81
Sept. 22—	Double season tickets	162 00	
23—	Double season tickets	36 00	
24—	Double season tickets	2 00	
	Double season tickets (Entry clerks and office).....	440 00	
			\$8,055 00
Sept. 12—	Single season tickets	\$120 00	
13—	Single season tickets	153 00	
14—	Single season tickets	381 00	
15—	Single season tickets	315 00	
16—	Single season tickets	87 00	
17—	Single season tickets	51 00	
19—	Single season tickets	141 00	
20—	Single season tickets	108 00	
21—	Single season tickets	45 00	
22—	Single season tickets	30 00	
23—	Single season tickets	6 00	
			\$1,437 00
Sept. 12—	Children's tickets	\$0 25	
13—	Children's tickets	2 50	
14—	Children's tickets	13 75	
15—	Children's tickets	6 00	
16—	Children's tickets	10 25	
17—	Children's tickets	13 25	
19—	Children's tickets	20 50	
20—	Children's tickets	29 75	
21—	Children's tickets	30 25	
22—	Children's tickets	25 00	
23—	Children's tickets	27 50	
24—	Children's tickets	20 00	
			\$199 00
Sept. 12—	Single admission tickets	\$17 00	
13—	Single admission tickets	86 00	
14—	Single admission tickets	1,932 00	
15—	Single admission tickets	779 00	
16—	Single admission tickets	886 50	
17—	Single admission tickets	1,156 50	
19—	Single admission tickets	1,307 00	
20—	Single admission tickets	1,945 50	
21—	Single admission tickets	2,073 00	
22—	Single admission tickets	2,380 00	
23—	Single admission tickets	2,955 50	
24—	Single admission tickets	1,390 50	
			\$16,908 50
Sept. 15—	Quarter-stretch badges	\$405 00	
16—	Quarter-stretch badges	125 00	
17—	Quarter-stretch badges	75 00	
19—	Quarter-stretch badges	105 00	
20—	Quarter-stretch badges	75 00	
21—	Quarter-stretch badges	25 00	
22—	Quarter-stretch badges	66 00	
23—	Quarter-stretch badges	27 50	
24—	Quarter-stretch badges	3 00	
			\$906 50
Sept. 12—	Special Stand receipts (at office)	\$57 00	
15—	Special Stand receipts	42 00	
16—	Special Stand receipts	10 00	
17—	Special Stand receipts	15 00	
19—	Special Stand receipts	27 00	
20—	Special Stand receipts	48 50	
21—	Special Stand receipts	21 50	
22—	Special Stand receipts	38 50	
23—	Special Stand receipts	155 00	
24—	Special Stand receipts	48 00	
			\$462 50
Sept. 15—	Grand Stand receipts	\$153 50	
16—	Grand Stand receipts	164 50	
17—	Grand Stand receipts	150 00	
19—	Grand Stand receipts	186 50	
20—	Grand Stand receipts	279 50	
21—	Grand Stand receipts	254 00	
22—	Grand Stand receipts	383 00	
23—	Grand Stand receipts	356 50	
24—	Grand Stand receipts	205 00	
			\$2,132 50
	Amount carried forward		\$54,865 81

Amount brought forward		\$54,865 81
Sept. 24—Hack and coupé badges	\$11 00	
		<u>\$11 00</u>
Sept. 24—Sweepstakes (premiums)	\$258 50	
Race programmes	206 30	
Pool privilege	10,787 00	
Park privileges	1,000 00	
Art catalogues	58 85	
		<u>\$12,310 65</u>
<i>Premiums.</i>		
Feb. 28—Rebate	\$15 00	
Dec. 30—State warrant	17,500 00	
		<u>\$17,515 00</u>
<i>Expense.</i>		
Sept. 24—Hay sold at Park by Forage Clerk	\$109 30	
27—Straw sold at Park to C. H. Eldred	24 00	
Oct. 3—Hay sold by Norman	5 60	
26—Sale of alfalfa hay to A. Meiss	82 60	
Nov. 5—Rebate on lumber, F. & T. L. Co.	7 90	
30—Sale of old lumber, D. Flint	5 00	
Dec. 30—Error—account of overcharge, bill of J. Bruner	24 25	
		<u>\$258 65</u>
<i>Entrances Due.</i>		
Mar. 11—P. A. Finigan, on account of "Edwin F"	\$25 00	
Aug. 31—Eugene Hart, on account of "Fred Ross"	60 00	
		<u>\$85 00</u>
<i>D. O. Mills & Co.</i>		
1888.		
Jan. 31—Overdraft balance	\$2,148 43	
		<u>\$2,148 43</u>
		<u>\$87,194 54</u>

DISBURSEMENTS.

<i>Advertising.</i>		
1887.		
Sept. 26—Spirit of the Times	\$140 00	
L. P. Fisher, agent	209 00	
S. F. Chronicle	149 60	
Examiner	92 70	
Call Publishing Company	82 50	
Bulletin	80 00	
Alta	74 75	
Rural Press	65 00	
Post Publishing Company	50 00	
California Patron	36 00	
Hotel Gazette	15 00	
News Letter	10 00	
Breeder and Sportsman	128 75	
Tribune Publishing Company	20 00	
Allen & Gardner	10 00	
Ayers & Lynch	35 80	
Chico Enterprise	10 00	
Vacaville Reporter	5 00	
Red Bluff Sentinel	12 00	
People's Cause	7 50	
T. J. Alexander	6 00	
Marysville Democrat	12 00	
Sonoma Publishing Company	22 25	
Modesto News	10 00	
Placer Herald	6 00	
Dixon Tribune	6 00	
Oroville Register	5 00	
Galt Gazette	6 00	
Oct. 5—Stockton Mail	15 00	
Stockton Independent	15 00	
7—Sacramento Bee	92 00	
10—Record-Union	208 50	
Dec. 8—The Rescue	10 00	
1888.		
Jan. 31—Spirit of the Times	15 00	
		<u>\$1,662 35</u>
Amount carried forward		\$1,662 35

Amount brought forward \$1,662 35

Building and Improvements.

Mar. 31—J. Wood, on account of sidewalk, H Street, Twentieth to Twenty-third	\$440 00	
Aug. 31—Labor, account of remodeling cottage stalls	29 00	
Sept. 3—C. Schindler, cottage stalls contract	1,000 00	
7—J. Shellars, account purchase open seats at Park	150 00	
9—J. H. Pollard, repairs to gable Pavilion	17 50	
P. S. Lawson, gutters for skylights	405 00	
J. F. Bohn & Bro., staging	150 00	
26—J. W. Cox, filling in cottage stalls	78 80	
Oct. 10—C. Schindler, extra work on cottage stalls	4 00	
Sacramento Electric Light Co., hangers and wire	60 00	
J. A. Roebling Sons' Co., electric light wire	79 79	
J. Z. Davis, six showcases with stands	120 00	
Dec. 1—P. S. Lawson, repairing Conservatory roofs	73 45	
1888.		
Jan. 31—E. A. Boyver, eave-troughs cottage stables	92 50	
		\$2,700 04

Premiums.

1887.		
Feb. 12—Robert Reed, account of 1886	\$10 00	
23—Addie L. Hughes, account of 1886	5 00	
Mar. 29—Mrs. J. J. Brown, account of 1886	5 00	
A. Meister, account of 1886	10 00	
Carlaw Bros., account of 1886	30 00	
April 30—E. W. Melvin, account of 1886	5 00	
May 2—E. K. Alsip, account of 1886	5 00	
Sept. 30—Account of bicycle tournament	250 00	
Account of ladies' tournament	350 00	
I. Lea, account of 1886	5 00	
First Department, horses	2,655 50	
First Department, cattle	2,225 00	
First Department, sheep	476 00	
First Department, goats	178 10	
First Department, swine	286 25	
First Department, poultry	182 50	
Second Department, agricultural machinery	781 50	
Third Department, textile fabrics	361 00	
Fourth Department, mechanical products	704 00	
Fifth Department, agricultural products	766 00	
Sixth Department, fruits, etc.	1,051 50	
Seventh Department, fine arts	1,055 00	
Eighth Department, county exhibits	2,000 00	
Ninth Department, miscellaneous	240 00	
Nov. 4—W. K. Vanderslice, account of medals, etc.	881 57	
		\$14,538 92

Expense Account.

Feb. 26—G. W. Harlow, hay for team at Park	\$14 35	
28—Sundries for the month	12 20	
Mar. 31—M. F. Johnson, legal services	20 00	
Sundries for the month	12 50	
April 30—Telephone Co., three months service	16 70	
Sundries for the month	18 95	
May 31—Martin & Co., account of committees	10 75	
L. R. Davis, hay	13 00	
Sundries for May	17 60	
June 30—Sundries for June	31 00	
July 31—Hay for team at Park	25 75	
J. P. Watson, extra watchman account July 4th	6 00	
Sundries for the month	49 35	
Aug. 31—Telephone Company	16 40	
Sundries for August	40 65	
Nat. Christopher & Co., reeving halyards	20 00	
Sept. 6—C. Deakin, account Art Department	19 25	
7—C. N. Herndon, repairs at Park	23 00	
9—J. C. Glover, rent of showcase, 1886	5 00	
15—Cappa's band	600 00	
Larson & Anderson, painting at Park	10 00	
H. A. Wade, soap	12 00	
17—Dues to National Trotting Association	106 00	

Amount carried forward ... \$1,100 45 \$18,901 31

	Amount brought forward	\$1,100 45	\$18,901 31
Sept. 23—	Indian race	55 00	
26—	Music	930 00	
	B. A. Johnson, account Directors Stand	310 45	
	J. F. Toomey, hack hire	27 50	
	C. M. Bambaugh, repairs at Pavilion	45 00	
27—	Donation to Knights of Pythias	400 00	
	"Spirit of the Times," extra papers	40 00	
28—	G. W. Hancock, traveling expenses	20 80	
	L. B. Clark, for straw	472 86	
30—	Rent of outside stables	14 00	
	Sundries for September	47 55	
Oct. 3—	G. M. Lingo, 16 tons of loose alfalfa hay	160 00	
	Geo. Boyne, decorating Pavilion	180 00	
	J. P. Counts, stable rent	5 00	
4—	N. L. Drew, 97 tons of oat hay, at \$15 40	1,493 80	
5—	John Rooney, 10 tons 750 lbs. alfalfa hay, at \$12	124 50	
	E. L. Smith, making badges	17 40	
8—	Whittier, Fuller & Co., payment on glass, paints, etc. ..	422 47	
	Capital Gas Company, gas	615 60	
	Richards & Knox, lumber	376 76	

 \$6,889 14

Pavilion Payroll.

Oct. 8—	O. P. Dodge, Assistant Superintendent	\$175 50	
	J. C. Pierson, Assistant Superintendent Machinery Department ..	130 00	
	J. S. Miller, Financial Secretary	75 00	
	Norton Bush, Superintendent Art Department	250 00	
	Anthony Hubbs, entry clerk	90 00	
	W. W. Greer, entry clerk	90 00	
	Samuel Blair, entry clerk	83 50	
	C. H. Green, chief ticket clerk	60 00	
	E. P. Howe, assistant entry clerk	30 00	
	Thomas Gleeson, assistant entry clerk	30 00	
	T. T. Burnett, doorkeeper	9 00	
	C. B. Herndon, doorkeeper	9 00	
	J. H. Leonard, doorkeeper	3 00	
	M. Coffey, doorkeeper	3 00	
	Abraham Kithley, doorkeeper	51 00	
	H. M. O'Shea, doorkeeper	51 00	
	J. P. Watkins, doorkeeper	30 00	
	P. Nash, fire watch	57 00	
	Mrs. Bateman, showcases	34 00	
	T. C. Pockman, foreman night watch	45 00	
	Mrs. Jackson, ladies' room	24 00	
	G. C. Freeman, messenger	30 00	
	J. R. Parker, carpenter	16 50	
	Frank Richmond, carpenter	39 00	
	John Churchman, carpenter	39 00	
	Charles Graywiller, millwright	55 50	
	William Turner, engineer	117 50	
	Walter Kay, fireman	54 40	
	H. F. Pierson, foreman	10 50	
	J. H. Wolf, gatekeeper	45 00	
	C. L. Sprague, gatekeeper	34 00	
	M. Gilman, gatekeeper	37 00	
	W. C. Holt, night watch, machinery	37 50	
	Nathaniel Christopher, laborer	67 25	
	Frederick Nold, laborer	60 50	
	E. C. Cook, laborer	51 00	
	R. J. Kady, laborer	23 00	
	Thomas Kane, laborer	54 00	
	W. L. Jordan, laborer	35 00	
	John Bowman, laborer	26 20	
	W. Craig, laborer	19 00	
	W. A. Smith, laborer	69 75	
	H. Graft, laborer	61 50	
	G. H. Herman, laborer	62 50	
	George Howard, laborer	63 75	
	James Deming, laborer	60 75	
	Andrew George, laborer	54 50	
	M. Lucy, laborer	54 75	
	M. Gallagher, laborer	49 75	
	Amount carried forward	\$2,659 10	\$25,790 45

	Amount brought forward	\$2,659 10	\$25,790 45
Oct. 8--	J. T. Barnes, laborer.....	51 75	
	John Ireland, laborer.....	55 00	
	M. Moreno, laborer.....	45 75	
	C. C. Folger, laborer.....	45 75	
	S. W. Butler, Jr., laborer.....	43 50	
	W. M. Smith, laborer.....	45 75	
	John Carmody, laborer.....	41 50	
	R. Harvey, laborer.....	42 25	
	H. Ross, laborer.....	37 50	
	J. Bennett, laborer.....	35 50	
	C. I. Lowell, laborer.....	36 50	
	B. B. Callahan, laborer.....	36 50	
	W. Jorguson, laborer.....	38 75	
	W. Toomey, ticket seller.....	1 00	
	M. Bronner, ticket seller.....	1 00	
	J. LaRue, ticket seller.....	1 00	
	H. LaRue, ticket seller.....	1 00	
	J. LaRue, ticket counter.....	24 00	
	A. J. Muir, gasman.....	20 00	
	Paul Memogona, Art Gallery.....	51 25	
	C. C. Folger, laborer.....	10 00	
	J. Cunningham, boiler maker.....	5 00	
			\$3,329 35

Park Payroll.

A. G. Folger, Assistant Superintendent.....	\$115 00	
George S. Milliken, Entry Clerk.....	65 00	
A. H. Estill, Clerk of Course.....	45 00	
George C. McMullin, Chief Marshal.....	45 00	
L. B. Clark, Assistant Marshal.....	45 00	
M. Judge, Assistant Marshal.....	45 00	
J. C. Kelly, chief ticket clerk.....	45 00	
H. C. Brown, membership ticket clerk.....	48 00	
George Waldron, assistant membership ticket clerk.....	22 50	
L. S. Upson, assistant ticket clerk.....	22 50	
Ralph McKune, assistant ticket clerk.....	22 50	
J. W. Nixon, Special Stand ticket clerk.....	22 50	
E. H. Rivett, assistant Special Stand ticket clerk.....	22 50	
William Talbot, blackboard clerk.....	18 00	
Hugh LaRue, Jr., blackboard clerk.....	18 00	
Charles McKillip, weighmaster.....	35 00	
H. S. Beals, usher Special Stand.....	18 00	
A. F. Dray, usher Directors Stand.....	18 00	
W. A. Dashiell, gatekeeper.....	45 00	
Matt. Coffey, gatekeeper.....	45 00	
T. T. Burnett, gatekeeper.....	45 00	
C. B. Herndon, gatekeeper.....	45 00	
J. H. Leonard, gatekeeper.....	45 00	
R. H. Newton, superintendent quarter-stretch.....	45 00	
J. B. Stoval, forage clerk.....	42 00	
George Mayberry, stairman, Judges Stand.....	18 00	
M. Sheehan, gate, Judges Stand.....	18 00	
R. May, quarter-stretch gate.....	18 00	
George Ritchie, quarter-stretch gate.....	18 00	
W. M. Mallard, quarter-stretch gate.....	18 00	
J. Hickey, exit gate.....	22 50	
A. Foley, exit gate.....	22 50	
W. H. Todd, track gate exit.....	18 00	
R. J. Kady, back gate.....	20 00	
F. Lambert, back gate.....	18 00	
Dan. Foley, big track gate.....	18 00	
Fred. Blue, stairman.....	18 00	
Albert Pait, stairman.....	18 00	
John Perry, stairman.....	18 00	
Sam. Hendricks, stairman.....	18 00	
W. W. Connor, stairman.....	18 00	
G. F. Lang, stairman.....	18 00	
Ed. Kegan, stairman.....	14 00	
George Warner, stairman.....	18 00	
George Boyver, milk test clerk.....	18 00	
William Smith, fire watch.....	27 00	
A. R. Corsaw, fire watch.....	27 00	
Amount carried forward	\$1,405 50	\$29,119 80

Amount brought forward		\$1,405 50	\$29,119 80
Oct. 8—	Carter Jackson, hay watch	25 00	
	William Norman, night hay watch	50 00	
	Harry Williams, ticket seller	13 50	
	Alfred Trainor, ticket seller	13 50	
	Matt. Bronner, ticket seller	13 50	
	W. Toomey, ticket seller	13 50	
	A. Spencer, ticket seller	12 00	
	L. Whiting, porter, Judges Stand	22 50	
	Fred. Collier, assistant starter	25 00	
	J. Kafford, police	18 00	
	D. Garrison, police	18 00	
	Samuel Johnston, police	18 00	
	P. F. Dolan, police	18 00	
	Dan. Cox, police	18 00	
	Dan. Moran, police	18 00	
	Henry Myers, police	18 00	
	E. S. Johnson, police	20 00	
	Jno. Ward, police	18 00	
	Robt. Corbett, police	18 00	
	P. J. Brown, police	18 00	
	D. M. Walker, police	18 00	
	Geo. Barrett, assistant to trackman	19 00	
	S. Shafer and team, hay delivery	56 00	
	P. O'Brien, helper	28 00	
	C. Sexton, carpenter	94 50	
	W. Van Norman, laborer	48 00	
	E. S. Johnson, laborer	62 00	
	Geo. Frisbie, carpenter	21 00	
	J. R. Parker, carpenter	15 00	
	F. McMillen, police	18 00	
	F. C. Kripp, police	4 00	
	C. Lance and team, helping trackman	109 50	
	L. Windsor, laborer	11 00	
	S. Addison, laborer	27 00	
	F. Bittingham, laborer	10 00	
	Geo. Waldron, carpenter	21 00	
	C. V. Garrett, poultry night watch	30 00	
	Jerry Melay, laborer	4 00	
	W. Walter, hauling garbage	4 00	
	R. C. Ferguson, care stands	80 00	
	A. Grubbs, hauling	1 00	
	A. Grubbs, rear porter, up stairs	26 00	
	Wm. Grant, rear porter, down stairs	20 00	
	Thos. Kane, laborer	4 00	
			\$2,525 00

Expense Account—Continued.

Oct. 10—	J. H. Campbell, account excavator	\$185 00	
	Mechanics Mill, for gas ladder	17 00	
	R. A. Steinegger, for mounting posters	60 00	
	Neville & Co., flags	103 20	
	J. Schram, merchandise	76 00	
	S. & G. Gump, account Art Department	5 00	
	J. Winterburn & Co., for electrotypes	9 00	
	A. Carlisle & Co., for ticket cases	21 25	
	G. G. Wickson & Co., repairs to typewriter	5 50	
	McL. & L., bill posting, Los Angeles	17 50	
	California Bill Posting Company, San José	12 00	
	J. A. McCormick, bill posting, Marysville	9 00	
	D. M. Pease, bill posting, Stockton	13 00	
	W. A. Caswell, bill posting, San Francisco, Sacramento, and Oakland	77 50	
	Barber & Wise, feed for team at Park	6 15	
	Standard Oil Company	2 00	
	H. S. Crocker & Co., paper	30 10	
	Sullivan & Co., paints, etc.	24 20	
	J. Breuner, use of furniture	29 25	
	W. O. Bowers, meals for help	12 50	
	W. F. Cutler, veterinary services	30 00	
	Capital Box Factory, for sawdust	13 15	
	F. Foster & Co., binding papers	31 75	
Amount carried forward		\$790 05	\$31,644 80

	Amount brought forward	\$790 05	\$31,644 80
Oct. 10—	F. & T. L. Co., lumber for cattle stalls	135 35	
	Grangers Business Association, annual account	175 30	
	R. E. Gogings, merchandise	5 20	
	Gattman & Wilson, merchandise	82 35	
	Wilson & Mitchell, hack	5 00	
	Huntington, Hopkins & Co., merchandise	144 50	
	J. F. Hill, annual blacksmithing account	166 00	
	A. S. Hopkins & Bro., merchandise	59 25	
	C. H. Holmes, engraving advertisement	10 00	
	Locke & Lavenson, merchandise	11 70	
	J. A. M. Martin, merchandise	88 90	
	C. McCreary & Co., merchandise	65 15	
	C. A. Maydwell, for lubricator	8 50	
	J. Oschner, repairs to tank	5 25	
	W. E. Osborn, wood for engine	37 50	
	Pioneer Box Factory, sawdust	11 25	
	M. R. Rose, account engine-room	20 40	
	Smith & Muir, annual plumbing account, Park and Pavilion	430 46	
	Root, Neilson & Co., account engine-room	5 00	
	J. W. Wilson, account horse hire	45 00	
	Willis & Ray, merchandise	7 00	
11—	E. C. Grubbs, cartage	7 50	
	Telephone Company	28 25	
	William McLaughlin, cartage	33 30	
22—	J. A. Lafferty, cartage	65 00	
24—	M. Toomey, use of team	9 50	
	G. C. Freeman, stenographer	30 00	
29—	J. C. Pierson, engineer services	111 45	
31—	Sundries for the month	156 40	
Nov. 7—	S. Eisman, help at Park	18 00	
30—	Sundries	107 43	
Dec. 2—	S. H. Taylor, account electric light	497 20	
	Sacramento Glass and Crockery Co., use of merchandise	72 00	
	W. J. O'Brien, lime	31 50	
	Union Ice Company	19 50	
	H., M. & S., merchandise	14 70	
8—	Miss Hinkson, filling diplomas, etc.	32 75	
16—	H. W. Rivett, cleaning office carpet	14 50	
	Puget Sound Lumber Company, lumber	5 00	
	H. F. Pierson, labor	73 50	
30—	Sundries for December	27 95	
1888.			
Jan. 4—	Postage and box rent	33 00	
	J. H. Wallace, account subscriptions	18 50	
6—	Capital Furniture Company, repairs	16 25	
9—	Capital Gas Company, fuel	12 00	
14—	Wells, Fargo & Co., expressage on diplomas	7 70	
	Telephone Company	16 40	
	Bell & LaRue, for experting Secretary's books	240 00	
31—	Sundries	4 90	
	<i>Interest.</i>		\$4,013 29
	D. O. Mills & Co., account note and overdrafts	\$1,397 61	
	<i>Insurance.</i>		\$1,397 61
	Sundry agencies, insurance premiums on Exposition Building	\$1,000 00	
	Sundry agencies, insurance on Grand Stand	375 05	
	Office, etc.	63 50	
	<i>Salaries.</i>		\$1,438 55
	Edwin F. Smith, Secretary	\$2,400 00	
	A. J. Hopper, Assistant Secretary	200 00	
	James Muir, janitor	900 00	
	H. Clock, night watchman	600 00	
	Trackman	618 85	
			\$4,718 85
	Amount carried forward		\$43,213 10

Amount brought forward \$43,213 10

Entrances Due.

Sept. 30—Race No. 3—J. Warburton on "Robt. St. Clair" (pacer).....	\$60 00	
Race No. 3—Alex. Lewis on "Travis" (pacer).....	60 00	
Race No. 14—Alex. Lewis on "Rajah".....	25 00	
Race No. 21—A. Harrison, balance.....	5 00	
Race No. 21—Alex. Lewis on "Rajah".....	30 00	
Race No. 21—W. P. Todhunter on "Prince of Norfolk".....	30 00	
Race No. 21—W. P. Todhunter on "May Blossom".....	30 00	
Race No. 29—W. P. Todhunter on "Rock".....	25 00	
Race No. 29—W. P. Todhunter on "May Blossom".....	25 00	
Race No. 29—Wm. Connell on "Hancock".....	25 00	
		\$315 00

Occident Stake, 1887.

Sept. 30—Paid collections made in 1885-6	\$700 00	
		\$700 00

California Annual Stake.

Sept. 30—Paid collections made in 1886.....	\$30 00	
		\$30 00

Races, 1887.

Race No. 1—Stakes.....	\$795 00	
Race No. 2—Purse.....	1,000 00	
Race No. 3—Purse.....	600 00	
Race No. 4—Stakes and added money	490 00	
Race No. 5—Stakes and added money	650 00	
Race No. 6—Stakes and added money	450 00	
Race No. 7—Purse.....	250 00	
Race No. 8—Stakes.....	450 00	
Race No. 9—Purse.....	1,000 00	
Race No. 10—Purse.....	500 00	
Race No. 11—Stakes and added money	790 00	
Race No. 12—Stakes and added money	830 00	
Race No. 13—Stakes and added money	1,280 00	
Race No. 14—Purse (selling).....	690 00	
Race No. 15—Stakes.....	750 00	
Race No. 16—Purse.....	720 00	
Race No. 17—Purse.....	1,200 00	
Race No. 18—Stakes and added money	350 00	
Race No. 19—Stakes and added money	700 00	
Race No. 20—Stakes and added money	550 00	
Race No. 21—Purse.....	300 00	
Race No. 22—Purse.....	1,000 00	
Race No. 23—Stakes and added money	1,100 00	
Race No. 24—Purse.....	720 00	
Race No. 25—Stakes and added money	600 00	
Race No. 26—Stakes and added money	525 00	
Race No. 27—Stakes and added money	590 00	
Race No. 28—Stakes and added money	690 00	
Race No. 29—Purse.....	250 00	
Race No. 30—Stakes.....	450 00	
Race No. 31—Purse.....	1,200 00	
Race No. 32—Entrance money	600 00	
Special No. 1—Purse	400 00	
Special No. 2—Purse	400 00	
Special No. 3—Purse	600 00	
		\$23,470 00

Park and Pavilion Receipts.

Rebate on annuals, account of life membership	\$28 00	
		\$28 00

Bills Payable.

1888.		
Jan. 23—Paid on note at D. O. Mills & Co.'s.....	\$17,500 00	
		\$17,500 00

D. O. Mills & Co.

Paid overdraft of 1886.....	\$983 29	
		\$983 29

Bills Receivable.

Note, H. A. Weaver	\$200 00	
Note, A. J. Rhodes	346 00	
		\$546 00

Jan. 31—Cash on hand	\$409 15	
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\$87,194 54

PARK AND PAVILION DAILY RECEIPTS.

1887.	Park.	Pavilion.
Sept. 12—Ticket sales		\$1,467 25
13—Ticket sales		1,771 50
14—Ticket sales		5,051 75
15—Ticket sales	\$1,662 00	611 50
16—Ticket sales	1,142 50	430 75
17—Ticket sales	1,049 75	641 00
19—Ticket sales	1,405 50	766 50
20—Ticket sales	1,789 75	919 50
21—Ticket sales	1,487 00	1,101 75
22—Ticket sales	2,060 00	1,024 50
23—Ticket sales	2,734 50	829 50
24—Ticket sales	1,064 00	604 50
Entry clerks' certificates	315 00	100 00
Privileges and programmes	11,993 30	881 00
Office collections, account life membership, sweepstakes, seats, and art catalogues	890 50	658 85
Totals	<u>\$27,593 80</u>	<u>\$16,859 85</u>

PROFIT AND LOSS ACCOUNT.

<i>Dr.</i>		
Balance February 1, 1887	\$22,576 48	
Building and improvements	2,700 04	
Advertising	1,062 35	
Races	6,530 00	
Insurance	1,438 55	
Interest	1,397 61	
Park and Pavilion receipts, rebate	28 00	
Premiums	14,538 92	
Salaries	4,718 85	
Expense	16,756 78	
		<u>\$72,347 58</u>
<i>Cr.</i>		
Rent	\$4,152 00	
Park and Pavilion receipts, Fair weeks	44,453 65	
State warrant and rebate account premiums	17,515 00	
Expense rebate	258 65	
Liabilities February 1, 1888	5,968 28	
		<u>\$72,347 58</u>

ANNUAL MEETING.

The Board of Directors of the State Agricultural Society held their annual meeting at the Secretary's office on Friday, January 27, 1888. Present—Directors Boggs, Chase, La Rue, Green, Shafter, Hancock, Cox, Rose, Singletary, and Shippee.

The meeting was called to order by President L. U. Shippee.

The minutes of the meeting held November 28, 1887, were read and approved.

Mr. Dana Perkins, who was appointed to take the place of P. A. Finigan, presented his commission and oath of office, and a certificate of its filing within the time prescribed by law in the office of the Secretary of State.

Mr. Finigan came in a few moments after the meeting had been called, and asked that his name be called, as he desired to be noted present. Said he:

"I desire to know what action this Board proposes to take in my case, and want my name called. I claim to be a member of this Board, legally commissioned and qualified, and I am instructed to make this demand by my counsel. Here I have documentary evidence to prove that my qualification was made within the specified time. I have done everything during the fifteen years I have served on this Board that a good and loyal citizen could do to advance the interests of the society, and I don't propose to be kicked out by a few in the State Department, backed by others whom in times gone by I have befriended. I must qualify within ten days after I receive my commission, and I have with me documents to prove it. Judge Garber says my case is a good one, and he will take it and win, or charge me no fee. I have seven other attorneys ready to do the same thing. They know I am right, they know I have done my duty, and they will not see me abused. I have been vilified by some members of this Board whom I have befriended."

Judge Shafter interrupted Mr. Finigan, saying he hoped the gentleman would not indulge in personalities. He said he was not present at a former meeting when Mr. Finigan impugned the acts and motives of his colleagues. He for one would protect Mr. Finigan in all his rights, but personalities should not enter into the controversy.

Mr. Finigan said that being the case, he had no more to say on that score. He was perfectly willing to leave his case in the hands of such a man as Judge Shafter. He was entitled to his seat in the Board, and the Governor in attempting his removal was doing him an injustice. The Governor had been ill-advised, and he proposed, if the Board refused him his seat, to carry it to the Supreme Court. He remarked, "I can get a decision from the Supreme bench in this matter inside of ten days."

Judge Shafter, to whom Mr. Finigan appealed, took the floor, and in a few moments reviewed the entire case. He said the real question was which of these two gentlemen are entitled to this office. We cannot, as a Board, decide this question. In most cases a public body is a judge of its own members, and can decide in case of contests. We, however, have no such power. There is no provision of law by which we can take such action. If a gentleman is sent here with proper vouchers we must recog-

nize them. We cannot sit in judgment upon this case. Mr. Finigan says he has proofs which will set aside the disability claimed, but this is no place for them. He must apply to the Courts. In short, the Constitution and the laws of our State empower the Governor to fill vacancies. So far as we are concerned the Governor's action in this case is conclusive. We have no right to interfere, and must recognize Mr. Perkins and his credentials.

Mr. Finigan—All I want to show the Board is my proofs. Here is Wells, Fargo's certificate, showing the date I received my commission, and here are the proofs of the filing of my oath on the following day with the Secretary of State. If I am to have a successor, I would rather it would be Mr. Perkins than any gentleman I know, but I am not going to tamely submit when I know I am right.

Mr. Boggs—What was the date of your appointment and the date of your filing your oath with the Secretary of State?

Mr. Finigan—I was appointed January nineteenth, and my oath was filed February nineteenth. The statute says I must file my oath within a certain time after I receive my commission, and this I claim I have complied with. If the express company failed to deliver it on time, or if there was negligence in forwarding it, that was no fault of mine.

Mr. Boggs suggested that it be made to appear on the minutes that Mr. Finigan appeared before the Board and claimed his seat.

Director Rose—Mr. Finigan can readily see by the remarks of Judge Shafter that we are not the judge of our own members, and consequently cannot take action as he desires. He not being in accord with the members of this Board has nothing to do with the case whatever. I think the best thing Mr. Finigan can do is to state his case here, make what representations he desires, and then go to the Courts.

Director Shafter introduced the following, which was unanimously adopted:

Resolved, That whereas it appearing the commission of Dana Perkins as a Director of the State Board of Agriculture, with a certificate of the Secretary of State, showing that his oath of office had been filed within three days after the date of said commission, vice P. A. Finigan (whose office is alleged to have become vacant), having been presented to this Board, it is ordered that the commission of said Dana Perkins, with said certificate, be filed by the Secretary of this Board; that said Dana Perkins' name be called as a member of this Board. P. A. Finigan appearing and claiming that he is a member of this Board, and that his name be called as such, this Board denies his right thereto, and directs that his name be omitted in all roll-calls of this Board. Such decision is founded upon the ground of want of jurisdiction on the part of this Board to inquire into the grounds of the action of the Executive Department in determining the fact of a vacancy in the office held by Mr. Finigan, or as to the executive reasons in issuing the commission to Mr. Perkins.

The roll of Directors was then called, and Mr. Perkins answered to his name.

The annual report of the Board to the Governor of the State, and the Secretary's financial statement for the fiscal year ending January thirty-first, were then read, adopted, and ordered to print.

The Committee on Park reported that they had leased the same for one year from December first, to Messrs. Gardner & Craig.

After considering other minor matters, relating to the business of 1887, the Board proceeded to organize for 1888.

ELECTION OF OFFICERS.

The Board of 1888 is composed of the same members, except Mr. Dana Perkins of Placer, who succeeds P. A. Finigan.

The election of President being the first order of business, Director Green placed in nomination for President the present incumbent, L. U. Shippee, of Stockton. In placing Mr. Shippee in nomination, Mr. Green paid a high tribute to that gentleman's moral worth, his business capacity and ability, and pointed with pride to the financial success of the society under his administration. Mr. Shippee was, upon motion, elected by acclamation.

In accepting a reelection Mr. Shippee thanked his colleagues for the high honor conferred, and said if he had done well in the past he would endeavor to do equally as well, if not better, in the future.

Hugh M. La Rue was reelected Superintendent of the Pavilion, and George W. Hancock was reelected Superintendent of the Park.

The Secretary was directed to advertise the usual trotting colt sweepstakes for the State Fair of 1888—entries to close March fifteenth.

Upon motion of Directors La Rue and Rose, the following stallion stake was ordered to be given and contested for at the State Fair of 1888:

GRAND STALLION STAKE.

Open to all stallions—\$500 entrance, of which \$250 must accompany nomination; \$250 payable August 1, 1888. The State Agricultural Society will add \$500 for each starter up to four, or \$2,000 for four or more starters. Stakes to be divided into three moneys—four sevenths to winner, two sevenths to second, and one seventh to the third horse.

The added money to be divided into four moneys, 50, 25, 15, and 10 per cent. If but two starters, stakes and added money divided five sevenths to the winner, and two sevenths to second. A stallion making a walkover gets the entire stakes, but no added money. Entries to close March 1, 1888.

Upon motion of Director Rose, it was ordered that no Paris mutual pools should be sold on heats at the State Fair of 1888.

On motion of Mr. Rose, Mr. La Rue was elected Judge of all the racing events, and was also recommended as a permanent Judge to the District Societies.

A protest of F. P. Lowell, declaring that two of his horses had not been treated fairly in the matter of awards, was not allowed, and the decision of the Judges stood.

It was resolved that hereafter all judging of animals at the State Fair shall be by a schedule of points.

It was decided that the Premium List shall be submitted at the next meeting of the Board.

On motion of Director Green, it was agreed that at the next Fair \$2,500 shall be distributed for county exhibits.

The following Committee on Speed Programme was appointed: Shippee, Rose, Chase, Green, and Singletary.

Honorable James Grant, of Grants Springs, California, was elected a delegate to represent the State Agricultural Society at the biennial meeting of the National Trotting Association, to be held in New York on February 8, 1888.

The Secretary was instructed to prepare a circular letter to the various Boards of Supervisors, urging upon them the importance of having their counties make exhibits at the Fair.

The President named the following members on Standing Committees:

FINANCE—Cox, Green, La Rue, Chase, and Mr. President.

PRINTING AND PUBLICATION—Boggs, Singletary, Shafter, Mr. President, and Secretary.

LIBRARY—La Rue, Perkins, Carr, Hancock, and Secretary.

After the consideration of other matters appertaining to the welfare of the society, the Board adjourned, to meet March twenty-second at three o'clock P. M.

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
	CLASS I—THOROUGHBRED HORSES. <i>Stallions—Four Years Old and Over.</i>				
Bay Chestnut.	Alta Joe Hooker	Norfolk. Monday	Ballinette. Mayflower	R. P. Ashe. Theo. Winters	Fresno. Sacramento.
	<i>Stallions—Two Years Old</i>				
Brown	Joe	Joe Daniels	Sister to Jim Douglas	L. U. Shippee	Stockton.
	<i>Stallions—One Year Old.</i>				
Chestnut. Chestnut. Chestnut.	Surento. The Czar. Don José	Hooker. Norfolk. Joe Hooker	Rosa B. Marion Countess Zeika	D. J. McCarty. Theo. Winters Theo. Winters	San Francisco. Sacramento. Sacramento.
Bay Chestnut. Ch. roan	Leh. Bronco Telish	Joe Hooker. Joe Hooker. Norfolk.	Illusion. Laura Winston Ballinette.	Theo. Winters Theo. Winters Theo. Winters	Sacramento. Sacramento. Sacramento.
	<i>Stallions—Colts Under One Year.</i>				
Chestnut. Chestnut.		Norfolk. Hooker	Marion Mattie Glenn	Theo. Winters Theo. Winters	Sacramento. Sacramento.
	<i>Mares—Four Years Old and Over, with Colt.</i>				
Sorrel Sorrel Bay Chestnut.	Lady Stacy Musquetaire Marion Mattie Glenn	Wildile. Hooker Malcolm Glen Athol (imp.)	Emma Barnes Lady Stacy Maggie Mitchell Mattie Gross	W. F. Cutler W. F. Cutler Theo. Winters Theo. Winters	Sacramento. Sacramento Sacramento. Sacramento.
	<i>Mares—Four Years Old and Over.</i>				
Bay Chestnut.	Question. Ballinette	Hooker. Monday or Eclipse.	Countess Zeika Ballirena	Theo. Winters Theo. Winters	Sacramento. Sacramento.
	<i>Mares—Two Years Old.</i>				
Chestnut.	Verona	Jim Gannon	Lizzie P	P. Siebenthaler	Sacramento.

<i>Mares—One Year Old.</i>					
Bay	Isabella	Norfolk	Maggie S	C. Halverson	Routiers
<i>Mares—Colts Under One Year.</i>					
Chestnut	Warwick		Maggie S	C. Halverson	Routiers
Chestnut	Cannie Scot		Verona	P. Siebenthaler	Sacramento
Bay	Norfolk		Ballinette	Theo. Winters	Sacramento
FAMILIES.					
<i>Sire, with not less than five of his Colts, all Thoroughbred.</i>					
Chestnut	Joe Hooker	Monday	Mayflower	Theo. Winters	Sacramento
<i>Dam, with not less than two of her Colts, all Thoroughbred.</i>					
Chestnut	Ballinette	Monday or Eclipse	Ballrina	Theo. Winters	Sacramento
Bay	Marion	Malcolm	Maggie Mitchell	Theo. Winters	Sacramento
Bay	Margie S	Bayonet	Miss Stoner	C. Halverson	Routiers
<i>Stallion, other than Thoroughbred, with not less than five of his Colts.</i>					
Brown	Privateer	Buccaneer	Lady Narley	Henry Klemp	Pleasant Grove
Bay	Mt. Vernon	Nutwood	By Chieftain	J. A. McCloud	Stockton
Bay	Alex Button	Alexander	Lady Button	Geo. Woodard	Woodland
Bay	Miller's Hambletonian	California Star	By Nelson	A. L. Miller	Walsh Station
Bay	Sterling	Egmont	By Flaxtail	M. W. Hicks	Sacramento
<i>Dam, other than Thoroughbred, with not less than two of her Colts.</i>					
Brown	Lucy	Hiram Moore	Unknown	Mrs. W. C. Stahl	Pleasant Grove
Brown	Colt, Sunrise	Privateer	Lucy	Mrs. W. C. Stahl	Pleasant Grove
Bay	Colt, Francis	Privateer	Lucy	Mrs. W. C. Stahl	Pleasant Grove
Gray	Lucy Gray	Combination	St. Clair mare	A. D. Miller	Walsh Station
Bay	Colt, Luella	Miller's Hambletonian	Lucy Gray	A. D. Miller	Walsh Station
Bay	Colt, The Forest	Miller's Hambletonian	Lucy Gray	A. D. Miller	Walsh Station
Bay	Flash	Egmont	Lightfoot	M. W. Hicks	Sacramento
Brown					
CLASS II.—HORSES OF ALL WORK.					
<i>Stallions—Four Years Old and Over.</i>					
Bay	Robert Bruce	John Bull	By Ballfounder	Dan. Gifford	Sacramento
Gray	Silver Leaf	Gray Eagle	By Tecumseh	Wm. Bauden	Sacramento
Gray	Maje	Gray Eagle	Maud	W. E. Comstock	Pleasant Grove

FIRST DEPARTMENT—Continued.

Color.	Name.	Sex.	Pam.	Owner.	Residence.
Dark chestnut.	Intellect 2d.	Intellect 1st.	Lummix mare.	John Kerr	Colusa.
Sorrel	Western	Prompter	By Nelson	A. D. Miller	Walsh Station.
Bay	Echanson	Imported		T. Skillman	Petaluma.
Bay	Elector	Imported		T. Skillman	Petaluma.
Black	Midlothhead	Unknown		F. R. Shaw	Salina, Kansas.
	<i>Stallions—Three Years Old.</i>				
Brown	Francis	Lord Pollock	Unknown	Frank R. Shaw	Salina, Kansas.
Brown	Romco	Lord Pollock	Unknown	Frank R. Shaw	Salina, Kansas.
Bay	Leopard	Lord Pollock	Unknown	Frank R. Shaw	Salina, Kansas.
	<i>Stallions—Two Years Old.</i>				
Bay	Mark Gibson	Jim Douglas	Jennie Gibson	F. Depoister	Sacramento.
Sorrel	Francis	Hooker	Unknown	John Adams	Brooks Station.
	<i>Stallions—One Year Old.</i>				
Sorrel	Selim	Miller's Hambletonian.	By Vibrator	P. Russell	Brighton.
Black	Johnnie Vernon	Mt. Vernon	By son of Dave Hill	J. A. McCloud	Stockton.
Bay	The Forest	Miller's Hambletonian.	Lucy Gray	A. D. Miller	Walsh Station.
	<i>Stallions—Under One Year.</i>				
Gray	Dennis	St. Lawrence, Jr.	Lizzie	R. J. Merkley	Sacramento.
	<i>Mares—Four Years Old and Over, with Coll.</i>				
Bay	Fannie	Vibrator	Unknown	H. H. Wilson	Nicolaus.
Bay	Colt, Jessie	Earl of Derby	Fannie	H. H. Wilson	Nicolaus.
Bay	Mayflower	Windrop	Unknown	J. A. McCloud	Stockton.
Bay	Colt	Mt. Vernon	Mayflower	J. A. McCloud	Stockton.
Black	Lizzie	Normandy, Jr.	Mary Ann	R. J. Merkley	Sacramento.
Gray	Dennis	St. Lawrence, Jr.	Lizzie	R. J. Merkley	Sacramento.
Gray	Lucy Gray	Combination	St. Clair mare	A. D. Miller	Walsh Station.
Bay	Nellie	Miller's Hambletonian	Lucy Gray	A. D. Miller	Walsh Station.
Gray	Dolly	Unknown	Unknown	J. J. McGrath	Marysville.
Gray	Colt	Alpheus	Dolly	J. J. McGrath	Marysville.
	<i>Mares—Four Years Old and Over.</i>				
Brown	Mary	Murphy's St. Clair	By John Nelson	C. Halverson	Routiers.

Chestnut. Chestnut.	Lena. Dolly Douglas	Unknown. Jim Douglas	Unknown. Cole.	W. Cole. W. E. Comstock.	Sacramento. Pleasant Grove.
	<i>Mares—Two Years Old.</i>				
Black. Brown. Gray	Flora Vandee. Nellie Vernon Luella	Vandee. Mt. Vernon. Miller's Hambletonian.	Polly. By son of Dave Hill Lucy Gray	W. E. Comstock. J. A. McClelland. A. D. Miller.	Pleasant Grove. Stockton. Walsh Station.
	<i>Mares—One Year Old.</i>				
Gray	Topsy	Maje.	St. Clair mare.	W. E. Comstock.	Pleasant Grove.
	<i>Mares—Suckling Colts.</i>				
Bay. Bay. Bay.	Maud. Nellie. Jessie.	Gray Eagle. Miller's Hambletonian. Earl of Derby	By Pritchard's Norman. Lucy Gray. Fannie	Jacob Hintz. A. D. Miller. H. H. Wilson.	Sacramento. Walsh Station. Nicolais.
	CLASS III—DRAFT HORSES—NORMANS.				
	<i>Stallions—Four Years Old and Over.</i>				
Bay. Black. Gray	Hatchet. Ernest Perriott. Wide Awake.	Imported. Imported. Wide Awake		A. J. Ogden. T. Skillman. Levi Carter.	Woodland. Petaluma. Ceres.
	<i>Stallions—One Year Old.</i>				
Brown	Pixley	Debonaire	Bisch	F. B. Chandler.	Elmira.
	<i>Stallions—Under One Year.</i>				
Gray	Shasta	Duke of Morris.	Bisch	F. B. Chandler.	Elmira.
	<i>Mares—Four Years Old and Over, with Colt.</i>				
Gray. Gray colt.	Bisch. Shasta.	Imported. Duke of Morris.	Imported. Bisch	F. B. Chandler. F. B. Chandler.	Elmira. Elmira.
	CLASS IV—DRAFT HORSES—PERCHERONS.				
	<i>Stallions—Four Years Old and Over.</i>				
White. Black. Black	Eureka (850). Faisan (3534). Hecule	Superior (454) (imp.) Chivalry (1900). Imported	Rebecca. Julie, by Brilliant (1899).	C. K. Bailey. C. K. Bailey. T. Skillman.	Stockton. Stockton. Petaluma.
	<i>Stallions—Three Years Old.</i>				
Black. Black	Black. Paradis	Desire (1946). Imported	Chopine (4673).	C. K. Bailey. T. Skillman.	Stockton. Petaluma.

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Bay	<i>Stallions—Two Years Old.</i>				
	Sir Francis	Lord Pollock (2246)	Princess Beatrice (2148)	Frank R. Shaw	Salina, Kansas.
Black	<i>Mares—Four Years Old and Over, with Colt.</i>				
	St. Julia	Buckeye Brilliant (1931)	Christine	C. K. Bailey	Stockton.
Black	<i>Mares—Suckling Colts.</i>				
	Carrie	Faisan	St. Julia	C. K. Bailey	Stockton.
	CLASS V—DRAFT HORSES—CLYDESDALES.				
	<i>Stallions—Four Years Old and Over.</i>				
Bay	Duke	Ben Lomond	Jule	Jas. Roberts	Irvington.
	<i>Stallions—Three Years Old.</i>				
Bay	Sir Leonard	Lord Pollock (2246)	Princess Beatrice (2148)	F. R. Shaw	Salina, Kansas.
Bay	Lord Pollock 24	Lord Pollock	Lady Due	F. R. Shaw	Salina, Kansas.
	<i>Stallions—Two Years Old.</i>				
Bay	Sir Francis	Lord Pollock (2246)	Princess Beatrice (2148)	F. R. Shaw	Salina, Kansas.
	<i>Stallions—One Year Old.</i>				
Bay	Prince	Ben Lomond	Jule	Jas. Roberts	Irvington.
	<i>Stallions—Under One Year Old.</i>				
Bay	Jubilee	Exchange	Jule	Jas. Roberts	Irvington.
	<i>Mares—Four Years Old and Over, with Colt.</i>				
Bay	Jule	Glancier (imp.)	Unknown	Jas. Roberts	Irvington.
Bay	Jubilee	Exchange	Jule	Jas. Roberts	Irvington.
Bay	Princess Beatrice (2148)			F. R. Shaw	Salina, Kansas.
	<i>Mares—Four Years Old and Over.</i>				
Bay	Princess Beatrice (2148)	Prince Geo. Frederic (3167)	Princess Beatrice	F. R. Shaw	Salina, Kansas.
Bay	Lady Smith			F. R. Shaw	Salina, Kansas.
	<i>Mares—Three Years Old.</i>				
Bay	Damsel	Ben Lomond	Jule	Jas. Roberts	Irvington.

<i>Mares—Two Years Old.</i>		Ben Lomond.....	July	Jas. Roberts	Irvington.
Bay	Dolly				
CLASS VI.—DRAFT HORSES, OTHER THAN NORMANS, PERCHERONS, OR CLYDESDALES.					
<i>Stallions—Four Years Old and Over.</i>					
Brown	Donald Dinnie, Jr.	Donald Dinnie.....	Maggie	H. S. Moddison	Sacramento.
Dark brown	Earl of Derby	Lord Derby	Fannie	R. G. McKenzie	Nicolaus.
Black	Black Prince, Jr.	Black Prince	Morgan mare	Frank Cox	Elk Grove.
Dark roan	Monarch	Monarch	Black Hawk Morgan mare	J. P. March	Yolo.
Bay	Exchange	Imported	Shire bred	W. H. French	Alviso.
Sorrel	General	Napoleon	May	W. E. Comstock	Pleasant Grove.
Gray	Champion, Jr.	Champion	Jennie	R. J. Merkle	Sacramento.
Gray	St. Lawrence, Jr.	St. Lawrence	Nellie	R. J. Merkle	Sacramento.
<i>Stallions—Three Years Old.</i>					
Black	Charlie	Black Prince	Morgan mare	Frank Cox	Elk Grove.
Gray	Doctor	Unknown	Unknown	Frank R. Shaw	Salina, Kansas.
Brown	Dandy	Unknown		Frank R. Shaw	Salina, Kansas.
<i>Stallions—Two Years Old.</i>					
Gray	French	Devotte	Dolly	A. J. Ogden	Woodland.
Black	Cloud	St. Cloud	May	W. E. Comstock	Pleasant Grove.
Gray	Vandee, Jr.	Vandee	Nellie	R. J. Merkle	Sacramento.
<i>Stallions—One Year Old.</i>					
Brown	Young Donald Dinnie	Donald Dinnie.....	Babbitt	Jas. Coil	Sacramento.
Brown	Paddie Ryan	Donald Dinnie.....	Belle	Jas. Coil	Sacramento.
Black	Dumas, Jr.	Dumas	Fannie	R. J. Merkle	Sacramento.
<i>Stallions—Under One Year Old.</i>					
Gray	Mack	Dumas	Nellie	R. J. Merkle	Sacramento.
<i>Mares—Four Years Old and Over, with Colt.</i>					
Black	Maggie	St. Lawrence	Fannie	H. S. Moddison	Sacramento.
Black	Nellie	Donald Dinnie.....	Maggie	H. S. Moddison	Sacramento.
Bay	Dolly	Donald Dinnie.....	Dollie	M. Toomey	Wash Station.
Bay	Miss Dinnie	Donald Dinnie.....		M. Toomey	Wash Station.
Bay	Babbitt	Donald Dinnie.....	Jas. Coil	Jas. Coil	Sacramento.
Bay	Captain	Donald Dinnie.....	Babbitt	Jas. Coil	Sacramento.

First Department—Continued.

Color.	Name.	Sex.	Dam.	Owner.	Residence.
Black Gray	Nellie Mack <i>Mares—Four Years Old and Over.</i>	Bologne (61), (imp.) Dumas	Vie Nellie	R. J. Merkle R. J. Merkle	Sacramento. Sacramento.
Brown Black	Belle Fannie <i>Mares—Three Years Old.</i>	Unknown Normandy (352)	Unknown Nellie	Jas. Coil R. J. Merkle	Sacramento. Sacramento.
Bay Bay Bay	Myrtle Nellie Fannie <i>Mares—Two Years Old.</i>	Honest Tom Honest Tom Honest Tom	Unknown Fannie Puss	H. H. Wilson H. H. Wilson C. E. Harris	Nicolaus. Nicolaus. Nicolaus.
Bay Bay	Belle Minnie <i>Mares—Suckling Colts.</i>	Honest Tom Honest Tom	Sallie Puss	H. H. Wilson C. E. Harris	Nicolaus. Nicolaus.
Black Black	Nellie Sue <i>Stallions—Four Years Old and Over.</i>	Donald Dinnie Debonaire	Maggie Fannie	H. C. Moddison R. J. Merkle	Sacramento. Sacramento.
CLASS VII.—ROADSTERS.					
Brown Roan Black Bay Bay Bay Brown Bay Brown Bay Gray	Mae Seneca Chief Black Diamond Young Baywater Conemara Ross S Alpha Ben T Privateer General Hamilton Buccaneer, Jr. Crescent <i>Stallions—Three Years Old.</i>	Seneca Chief Major Tourtelotte Black Diamond Baywater Brown's Volunteer Nutwood Privateer Singleton Buccaneer Tilton Almont Buccaneer Prompter	Fred Low Unknown By Dave Hill By Norfolk Lou Whipple By State of Maine Fawn By Harkaway Lady Narley By Langford By Senator Booth Starlight	C. W. Scott C. W. Scott H. M. Watson H. S. Moddison D. G. Hutchinson R. C. Sargent W. Gardner B. F. True Henry Klemp A. G. West A. D. Miller C. E. Pinkham	Madison. Madison. Vacaville. Sacramento. Woodland. Lodi. Marysville. Chico. Pleasant Grove. Grass Valley. Walsh Station. Sacramento.
Brown Bay	Don Marvin Prompter, Jr.	Fallis Prompter	Cora Copperbottom mare	F. P. Lowell Henry Klemp	Sacramento. Pleasant Grove.

Gray	Kilmore	Killarney	By Oddfellow	P. Fitzgerald	Woodland
	<i>Stallions—Two Years Old.</i>				
Peerless		Killarney	Mohawk Chief	H. G. Casey	Sacramento
Bay		Prompter	Lady Narley	C. E. Pinkham	Sacramento
Bay		Tilton Almont	Unknown	Geo. A. Pierce	Woodland
	<i>Stallions—One Year Old.</i>				
Black	Berlin Prince	Berlin	Unknown	J. A. Parker	Sacramento
Bay	Drum Major	Sterling	Madam Buckner	T. C. Snider	Sacramento
Chestnut	Tippertif	Ross S.	Gilroy Belle	R. C. Sargent	Sacramento
Brown	Sunrise	Privateer	Lucy	Mrs. W. C. Stahl	Pleasant Grove
Bay	Alhambra	Alpheus	By Simon Gurdy	Phil. McKune	Yuba City
Sorrel	Fear Not	Alpheus	By Black Hawk	W. Gardner	Marysville
Bay	Privateer, Jr.	Privateer	St. Clair mare	Henry Klemp	Pleasant Grove
Bay	General	Alex Button	Winnie	Geo. Woodard	Woodland
Bay	Gold Drop	Buccaneer, Jr.	By Nelson	A. D. Miller	Walsh Station
	<i>Stallions—Stuckling Colts.</i>				
Brown	Bookkeeper	Caliph	By Pedro	L. Whitney	Woodland
Bay	Archie	Miller's Hambletonian	Susie Gray	H. C. Howard	Brighton
	<i>Geldings.</i>				
Bay	Ackerman	Washington	Unknown	C. H. Gilman	Sacramento
Bay	Mark	Decoration	Unknown	L. Whitmore	Woodland
Brown	Pedro	Pedro	Unknown	L. Whitmore	Woodland
Bay	Orphan Boy	Tommy Benton	By Dave Hill, Jr.	J. L. McCord	Sacramento
Bay	January	Tommy Benton	By Dave Hill, Jr.	J. L. McCord	Sacramento
Chestnut	Wallace G.	Plumas	By Ethian Allen	P. Garrett	Sacramento
Black	Dandy Quil	Brigadier	By Son of Primus	P. M. Chatterdon	Chico
Brown	Prince	Missouri Chief	By Belmont	S. K. Trefry	Sacramento
Brown	Bum	Buccaneer	By Blackbird	B. F. True	Sacramento
Bay	Sligo	Singleton	By Volscian	B. F. True	Chico
Black	Franklin	Reno	Lancet mare	T. F. Ross	Chico
Bay	Chief	Alex Button	St. Clair mare	C. R. Hoppin	Sacramento
Bay	Randolph	Alcona	By C. M. Clay	J. W. Martin	Woodland
Bay	George	George M. Patchen, Jr.	Unknown	J. H. Martin	Yolo Station
Bay	Jerry	Killarney	Morgan mare	M. Griffin	Woodland
Black	Arnst	Gold Dust	By Dave Hill, Jr.	J. R. Hodson	Davisville
	<i>Mares—Four Years Old and Over.</i>				
Black	Solitaire	Singleton	By Signal	C. H. Gilman	Sacramento
Bay	Meta	Echo	By Consternation	F. L. Williams	Sacramento
Brown	Dell	Hadley horse	By Black Hawk	L. Whitmore	Woodland
Chestnut	Mignon	Elmo		Wm. O'Kane	San Francisco

Color.	Name.	Sex.	Dam.	Owner.	Residence.
<i>Mares—Three Years Old.</i>					
Chestnut	Tricks	Whipple's Hambletonian	By Sally Tricks	Henry Pierce	San Francisco.
Brown	Annie K	Nelson	St. Clair mare	H. Klemp	Pleasant Grove.
Gray	Mayfly	Norwood	By Black Hawk	John Bacher	Sacramento.
Gray	Dolly B	Alex Button	By General Taylor	J. H. Martin	Woodland.
Bay	Peggy Brown	Nelson	St. Clair mare	A. C. Miller	Walsh Station.
Gray	Susie Gray	General Taylor	Unknown	H. C. Howard	Brighton.
	Crescent	Prompter	Starlight	C. E. Pinkham	Sacramento.
<i>Mares—Two Years Old.</i>					
Brown	Nellie	Brigadier	Josephine	J. H. Glide	Sacramento.
Black	Lute	Brightwood	Unknown	L. Whitmore	Woodland.
Bay	Erso	Berlin	Spot	D. Renfro	Sacramento.
Bay	Madia	Sterling	Lady Narley	W. Gardner	Marysville.
Black	Genevra	Killarney	Mollie	J. W. Martin	Yolo Station.
Chestnut	Pansy	Sterling	By Young Tuckahoe	F. P. Lowell	Sacramento.
<i>Mares—Two Years Old.</i>					
Bay	Rosbud	Prompter	St. Clair mare	C. Kerby	Sacramento.
Bay	Reindeer	Prompter	By Copperbottom	H. Klemp	Pleasant Grove.
Bay	Yolo Maid	Alex Button	St. Clair mare	C. R. Hopkin	Woodland.
Bay	Daisy Vernon	Mc Vernon	By Romulus	J. A. McCloud	Stockton.
Bay	Beatrice	Sterling	Unknown	E. C. Morgan	Grass Valley.
Black	Jeanette	Buccaneer, Jr.	By Combination	A. D. Miller	Walsh Station.
<i>Mares—One Year Old.</i>					
Bay	Sulta	Caliph	By St. Clair	L. Whitmore	Woodland.
Black	Annie Laurie	Prompter	Bel	H. H. Wilson	Nicolaus.
Black	Daisy	Prompter	Belle	H. H. Wilson	Nicolaus.
Sorrel	Maybird	Prompter	By Black Ralph	H. Klemp	Pleasant Grove.
Black	Yolo	Cubit	By St. Clair	C. R. Hopkin	Woodland.
Chestnut	Nera Vernon	Mc Vernon	By Chieftain	J. A. McCloud	Stockton.
<i>Mares—Suckling Cols.</i>					
Brown	Adelia	Brilliant	Madam Buckner	T. C. Spider	Sacramento.
Bay	Francis	Privateer	Lucy	Mrs. W. C. Stahl	Pleasant Grove.
Sorrel	Allie	Alphcus	Dolly	J. J. McGrath	Marysville.

CLASS VIII.—CARRIAGE HORSES.

Matched Span of Carriage Horses—Owned and Used as such by One Person.

Black	Goldsmith Maid	Imported	D. J. McCarty	San Francisco.
Black	Lucy	Imported	D. J. McCarty	San Francisco.
Bay	Tom		C. H. Corey	San José.
Bay	Jerry		C. H. Corey	San José.
Steel gray.	Garland		E. M. Leitch	Sacramento.
Steel gray.	Sister		E. M. Leitch	Sacramento.

CLASS IX.—ROADSTER TEAMS.

Double Team Roadsters—Owned and Used as such by One Person.

Bay	Huldy	Duplicate.	Unknown	W. Hays	Madison.
Bay	Curb.	Duplicate.	Unknown	W. Hays	Madison.
Bay	Lucy	Black Ralph	Unknown	G. W. Griffin	Woodland.
Brown	Dolly Bloodstone		Gilroy Belle	G. W. Griffin	Woodland.
Brown	George Washington	Nephew	McCrackin's Black Hawk	R. C. Sargent	Lodi.
Chestnut	Lady Washington	Nephew	By McCrackin's Black Hawk	R. C. Sargent	Lodi.
Chestnut	Anna E.	Tommy Benton	By Dave Hill	J. L. McCord	Sacramento.
Chestnut	Mary Sue	Tommy Benton	Unknown	J. L. McCord	Sacramento.
Bay	Ashland	By Phumas	Unknown	D. J. McCarty	San Francisco.
Bay	Little Boy	By McNassar horse.	Unknown	D. J. McCarty	San Francisco.
Gray	Rose	Berlin	Lady Merwin	M. Coffey	Sacramento.
Gray	Nellie	Berlin	Lady Merwin	M. Coffey	Sacramento.
Sorrel	Nip	Gold dust	Morgan mare.	M. Coffey	Sacramento.
Sorrel	Tuck	Gold dust	Morgan mare.	E. C. Fortier	Red Bluff.
Bay	Chief			E. C. Fortier	Red Bluff.
Bay	Kentucky Maid			Henry Pierce	San Francisco.
Sorrel	Jack	By Hambletonian		Henry Pierce	San Francisco.
Sorrel	Harry	By Hambletonian		H. L. White	San Francisco.
				H. L. White	San Francisco.

CLASS X.—STANDARD TROTTERS.

Stallions—Four Years Old and Over.

Chestnut	Elmo	Mohawk	Addie Lee	Jno. Dennon	Grass Valley.
Black	Berlin	Blackbird	Felicia	H. S. Beals	Sacramento.
Bay	Fallis	Electioneer	By Flaxtail	F. P. Lovell	Sacramento.
Bay	Apex	Prompter	Venus	J. A. Grove	Fresno.
Bay	Transit	Cambet	Metamora	M. Toomey	Walsh Station.
Brown	Cubit			C. R. Hopkin	Woodland.
Bay	Clay Duke			J. W. Martin	Yolo Station.

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.*	Owner.	Residence.
<i>Stallions—Three Years Old.</i>					
Bay	Duke Almont	Almont	By A. T. Stewart	Kirkpatrick & Whittaker	Knight's Ferry.
Black	Thaddeus	Alcona	By Cassius M. Clay, Jr.	J. W. Martin	Yolo Station.
Black	Shamrock	Buccaneer	Fern Leaf	G. Valensin	Sacramento.
Bay	Corsair	Privateer	Lightfoot	T. C. Snider	Sacramento.
<i>Stallions—Two Years Old.</i>					
Black	Creole	Prompter	Grace, by Buccaneer	T. C. Snider	Sacramento.
Bay	Antelope	Anteco	By Elmo	W. A. Munion	Dixon.
Chestnut	Daybreak	Dawn	Gazelle, by Gen. McClellan	J. A. Grove	Fresno.
Chestnut	Waverly	Prompter	Flash, by Egnont	M. W. Hicks	Sacramento.
<i>Stallions—One Year Old.</i>					
Sorrel	Del Rey	Clay Duke (7084)	Madonna	J. W. Martin	Yolo Station.
Brown	Alex Button, Jr. (7085)	Alex Button	Kate Carney	J. W. Martin	Yolo Station.
Bay	George V	Sidney	Flirt	G. Valensin	Sacramento.
Bay	Cubit	Sidney	Flight	G. Valensin	Sacramento.
Bay	Courier	Sterling	Mahaska Belle	M. W. Hicks	Sacramento.
Bay	Check	Prompter	Clara, by Buccaneer	M. W. Hicks	Sacramento.
Bay	Herald	Sterling	SallieMcKim, by Prompter	M. W. Hicks	Sacramento.
<i>Stallions—Suckling Colts.</i>					
Bay	Billy Vernon	Mt. Vernon	Mayflower	J. A. McCloud	Stockton.
<i>Mares—Four Years Old and Over.</i>					
Bay	Miller's Maid	Berlin	By Mohawk Chief	H. S. Beals	Sacramento.
Chestnut	Florence R	Nutwood	By Irwin Davis	G. W. Griffin	Woodland.
Black	Pansy	Berlin	Lady Hubbard	W. F. Smith	Sacramento.
Bay	Cora	Buccaneer	Pearl	W. F. Smith	Sacramento.
<i>Mares—Three Years Old.</i>					
Chestnut	Daisy	Prompter	By John Nelson	G. W. Hancock	Sacramento.
<i>Mares—Two Years Old.</i>					
Brown	Alaraba	Sultan	Cora	W. F. Smith	Sacramento.
Brown	Brown	Hawthorne	By Chieftain	L. U. Shippee	Stockton.
Brown	Carrie Vernon	Mount Vernon	By Winthrop	J. A. McCloud	Stockton.

First Department—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
<i>Mules—Matched Span, Three Years Old and Over, California Bred.</i>					
Brown	Sam and Jack	Sampson	Unknown.	H. H. Wilson	Nicolais.
Brown	Pete and Jack	Sampson	Unknown.	R. McKenzie	Nicolais.
<i>Mules—Two Years Old.</i>					
Dark roan.	Bird	Needy's imported jack	Bruce mare	J. P. March	Yolo.
<i>Mules—One Year Old.</i>					
Dark roan	Belle		Bruce mare	J. P. March	Yolo.
<i>Mules—Suckling.</i>					
Brown	Nellie		Belle	Jas. Coill	Sacramento.
CATTLE.					
Color.	Name.	Sire.	Dam.	Owner.	Residence.
CLASS I—DERHAM.					
<i>Bulls—Three Years Old and Over.</i>					
Red	Josephus	3d Thorndale Duke	Sadie Mason 6th	R. J. Merkle	Sacramento.
Red	Sonoma 2d	Cherry Prince (39128)	Caroline Airdrie	Wilford Page	Penn's Grove.
Red	Kaweah Duke	Henrietta's Duke (35754)	Miss Leslie 8th	H. C. Moore	Visalia.
Red	Oxford Duke 2d (33018)	Oxford Duke (53040)	Xylophia 5th	R. M. Dunlap	Galesburg, Ill.
Red	3d Kirklevington of Forest Home	Duke of Kirklevington	3d Oxford Rose	C. Younger & Son	San Jose.
Roan	5th Kirklevington of Forest Home	Duke of Kirklevington	Jessie Maynard	C. Younger & Son	San Jose.
Red roan.	Baden Duke 7th	Baden Duke	Caroline	Robt. Ashburner	Baden Station.
<i>Bulls—Two Years Old.</i>					
Red	Counsellor	Commissioner (73503)	Beauty 2d Maid	P. Peterson	Sites.
Red	Mugwump	Kirklevington Carey (30207)	Belle Medico	Wilford Page	Penn's Grove.
Red	Sharon Geneva	6th Duke of Sharon (29364)	Duchess 24th	H. C. Moore	Visalia.
Red	Red Eureka 2d (71422)	Leopard	Red Dolly 9th	E. S. Driver	Antelope.
<i>Bulls—One Year Old.</i>					
Red	Ben Butler	Hancock	4th Belle	P. Peterson	Sites.

Red and wh.	Mugwump.	Maxwell Chief	Mountain Maid	P. Peterson	Sites
Red	Solomon	Josephus	Helen Eyre	R. J. Merkle	Sacramento.
Red	Gladstone	Josephus	Ruby 3d	R. J. Merkle	Sacramento.
Roan	Rosierucian	Cherry Prince (59128)	Rose of Sonoma	Wilford Page	Penn's Grove.
Roan	Takes the Cake.	Cherry Prince (59128)	Belle Carol.	Wilford Page	Penn's Grove.
Roan	Patsy Carol.	Cherry Prince (59128)	Gold Note	Wilford Page	Penn's Grove.
Red	Mazcar	Cherry Prince (59128)	Mazourka Caroline	Wilford Page	Penn's Grove.
Red	Roan Duchess Duke.	Barrington D. of H. (49966)	Roan Duchess 14th	H. C. Moore	Visalia.
Red and wh.		Duke of Sharon (45938)	5th Louan Wataga	H. C. Moore	Visalia.
Roan		Czar (78059)	Chant 4th.	H. C. Moore	Visalia.
Red		Czar (78059)	Sharon Belle	H. C. Moore	Visalia.
Red	Belle Duke	Duke of Sharon 9th (45938)	Red Belle.	H. C. Moore	Visalia.
Red and wh.		Duke of Sharon 9th (45938)	Clarinda	H. C. Moore	Visalia.
Red and wh.		Duke of Sharon 9th (45938)	Clarion 2d	H. C. Moore	Visalia.
Red and wh.		Rosa Bonheur Duke (4753)	8th Louan Wataga	H. C. Moore	Visalia.
Red and wh.		Duke of Sharon 9th (45938)	Spotted Bruce	R. M. Dunlap	Galesburg, Ill.
Red	2d Kirklevington of Forest Home	Duke of Kirklevington	2d Belle of Avon Ranch	C. Younger & Son	San José.
Red	26th Kirklevington of Forest Home	3d Kirklevington	10th Rose of Forest Home	C. Younger & Son	San José.
Red roan	Duke of Baden 2d	Baden Duke 7th	Fidget 1st	Robt. Ashburner	Baden Station.
<i>Bulls—Calves.</i>					
Red	Sullivan	Counselor	2d Belle	P. Peterson	Sites
Red	Mayduke	Counselor	Baby Pet.	P. Peterson	Sites
Red	Syc	Counselor	Belle of Antelope	P. Peterson	Sites
Red and wh.	Artemus Ward	Counselor	4th Belle	P. Peterson	Sites
Red	Tom Sawyer	Counselor	3d Belle	P. Peterson	Sites
Red	Mark Twain	Counselor	Baby Louise	P. Peterson	Sites
Red	Seymour	Josephus	Edith	R. J. Merkle	Sacramento.
Red	Amazon	Josephus	Jane Eyre 2d	R. J. Merkle	Sacramento.
Red	Telegraph	Josephus	Edith 3d	R. J. Merkle	Sacramento.
Red	Yolo Chief	Josephus	Red Edith 3d	R. J. Merkle	Sacramento.
Red	Mascot	Josephus	Ruby 2d	R. J. Merkle	Sacramento.
Roan	Occident	Josephus	Edith Elkin	R. J. Merkle	Sacramento.
Red and wh.	Boom	Catchpenny (59107)	Belle of Sonoma	Wilford Page	Penn's Grove.
Red	Marvelous	Beaumont (36644)	Rosabella 2d	R. M. Dunlap	Galesburg, Ill.
Red	29th Kirklevington of Forest Home	Duke of Kirklevington	Oxford Rose 6th	C. Younger & Son	San José.
Red roan	30th Kirklevington of Forest Home	Duke of Kirklevington	Bonnie Belle 2d	C. Younger & Son	San José.
Red	Red Eureka 3d	Sir Sidon (61116)	Red Dolly 9th	E. S. Driver	Antelope.
Red	Baden Duke 24th	Baden Duke 7th	Frantic 4th	Robt. Ashburner	Baden Station.
Red	Red Duke	Baden Duke 7th	Red Pansy	Robt. Ashburner	Baden Station.
Red	Baron Frantic 7th	Grand Prince of Baden 2d	Frantic 20th	Robt. Ashburner	Baden Station.
<i>Cows—Three Years Old and Over.</i>					
Red	Belle of Antelope	Stockton Duke	Jennie McLain	P. Peterson	Sites

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Red	2d Belle of Antelope	Charley Harden	Belle of Antelope	P. Peterson	Sites.
Red	3d Belle of Antelope	3d Duke of Manchester	Belle of Antelope	P. Peterson	Sites.
Red	4th Belle of Antelope	3d Duke of Manchester	2d Belle of Antelope	P. Peterson	Sites.
Red	Mountain Maid	6th Duke of Manchester	Ruby	R. J. Merkle	Sacramento.
Red	Ruby 3d	6th Red Thorndale	6th Red Thorndale	R. J. Merkle	Sacramento.
Red	Edith 3d	Amos Ladd	Edith Elkin	R. J. Merkle	Sacramento.
Red	Edith	6th Red Thorndale	Red Edith	R. J. Merkle	Sacramento.
Red	Edith 2d	Cherry Prince (59128)	Rosita	Wilford Page	Penn's Grove.
Roan	Peerless Rose	El Medico (59730)	Belle Napier	Wilford Page	Penn's Grove.
Red	Belle Medico	Kirklevington	Maidie	Wilford Page	Penn's Grove.
Roan	Maita	(40216)	Belle Napier	Wilford Page	Penn's Grove.
Red	Belle of Sonoma	Sonoma (18356)	Mazourka Caroline	Wilford Page	Penn's Grove.
Red	Zurka Princess	Cherry Prince (59128)	Xylopa 5th	H. C. Moore	Visalia.
Red and wh.	Xylopa 6th	Logan (39629)	Happy Mary	R. M. Dunlap	Galesburg, Ill.
Red	Lone Butterfly	Duke Butterfly (43345)	Daisy	R. M. Dunlap	Galesburg, Ill.
Roan	Delia	6th Duke of Sharon (29344)	Red Dolly	C. Younger & Son	San José.
Red	Red Dolly 2d	Airdrie Thorndale	Red Dolly 2d	C. Younger & Son	San José.
Red	Red Dolly 14th	2d Duke of Akameda	2d Rose of Forest Home	C. Younger & Son	San José.
Red	10th Rose of Forest Home	2d Duke of Akameda	Dolly Thorndale	E. S. Driver	Antelope.
Red	Red Dolly 9th	Red Thorndale			
<i>Cows—Two Years Old.</i>					
Red	Rosely K	Hancock	2d Belle of Antelope	P. Peterson	Sites.
Red and wh.	Girofia	Josephus	Ruby	R. J. Merkle	Sacramento.
Red	Red Jane Eyre 3d	Josephus	Jane Eyre	R. J. Merkle	Sacramento.
Red	Cherry Rose	Cherry Prince (59128)	Rose of Sonoma	Wilford Page	Penn's Grove.
Red and wh.	Belle of Sonoma 2d	Catchpenny (59107)	Belle of Sonoma	Wilford Page	Penn's Grove.
Red	Carolina	Catchpenny (59107)	Caroline Airdrie	Wilford Page	Penn's Grove.
Red	Xylopa 8th	Oxford Duke (5904)	Xylopa 5th	H. C. Moore	Visalia.
Red	Jessie Maynard 3d	Duke of Kirklevington	Jessie Maynard	C. Younger & Son	San José.
Red	Red Dolly 23d	Forest King	Red Dolly 11th	C. Younger & Son	San José.
Red	4th Belle of Forest Home	Forest King	2d Belle of Avon Ranch	C. Younger & Son	San José.
Red	21st Rose of Forest Home	Forest King	14th Rose of Forest Home	C. Younger & Son	San José.
<i>Cows—One Year Old.</i>					
Red	Nettie P	Hancock	5th Belle	P. Peterson	Sites.
Red	7th Belle	Hancock	Belle of Antelope	P. Peterson	Sites.

Red	Alida P	Hancock	3d Belle	P. Peterson	Sites
Red	Jennie McL	Hancock	2d Belle	P. Peterson	Sites
Roan	Belle O'Neil Mead	Sonoma	Belle Strawberry	Wilford Page	Penn's Grove
Red and wh.	Belle Car	The Car (78055)	Geneva Belle	R. M. Dunlap	Galesburg, Ill.
Red	Oxford Rose 8th	Duke of Kirklevington	3d Oxford Rose	C. Younger & Son	San José
Red	Jessie Maynard 4th	4th Duke of Kirklevington	Jessie Maynard	C. Younger & Son	San José
Roan	Amelia 12th	5th Kirklevington of F. H.	Amelia 10th	C. Younger & Son	San José
Roan	24th Rose of Forest Home	3d Kirklevington of F. H.	7th Rose of Forest Home	C. Younger & Son	San José
<i>Hifers—Calves.</i>					
Red	Rosely K 2d	Counselor	Rosely K	P. Peterson	Sites
Red	Patty	Counselor	5th Belle	P. Peterson	Sites
Red	Ruby B	Rowena's Duke of Airdrie	Denorice B	P. Peterson	Sites
Red	True B	Rowena's Duke of Airdrie	Allie B	P. Peterson	Sites
Red and wh.	Violet	Josephus	May Girl	R. J. Merkle	Sacramento
Red	Daisy	Josephus	Helen 2d	R. J. Merkle	Sacramento
Red and wh.	Gold Nut	Sonoma Chief	Gold Vein	Wilford Page	Penn's Grove
Roan	Oxford Rose	Duke of Kirklevington	3d Oxford Rose	C. Younger & Son	San José
<i>Hens—Over Two Years Old.</i>					
Red	Mugwump	Kirklev'ton Carol (60297)	Belle Medico	Wilford Page	Penn's Grove
Roan	Marta	Kirklev'ton Prince (60216)	Madie	Wilford Page	Penn's Grove
Red	Belle of Sonoma	Sonoma (18356)	Belle Napier	Wilford Page	Penn's Grove
Red	Carolina	Catchpenney (59107)	Caroline Airdrie	Wilford Page	Penn's Grove
Red	Belle Medico	El Medico (59730)	Belle Napier	Wilford Page	Penn's Grove
Red	4th Belle of Antelope			P. Peterson	Sites
Red	3d Belle of Antelope			P. Peterson	Sites
Red	Mountain Maid			P. Peterson	Sites
Red	Rosely K			P. Peterson	Sites
Red	Counselor			P. Peterson	Sites
Red	3d Kirklevington of Forest Home			C. Younger & Son	San José
Red	Red Dolly 2d			C. Younger & Son	San José
Red	Red Dolly 14th			C. Younger & Son	San José
Red	Oxford Rose			C. Younger & Son	San José
Red	10th Rose of Forest Home			C. Younger & Son	San José
Red	5th Kirklevington of Forest Home			C. Younger & Son	San José
Red	Jessie Maynard 3d			C. Younger & Son	San José
Red	Red Dolly 23d			C. Younger & Son	San José
Red	21st Rose of Forest Home			C. Younger & Son	San José
Red	4th Belle of Forest Home			C. Younger & Son	San José
<i>Herts—Under Two Years Old.</i>					
Red	Ben Butler			P. Peterson	Sites
Red	Jennie McL			P. Peterson	Sites
Red	7th Belle			P. Peterson	Sites

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Red	Nettie P	.....	.....	P. Peterson	..... Zites
Red	Alida P	.....	.....	P. Peterson	..... Zites
Red	30th Kirklevington of Forest Home	.....	.....	C. Younger & Son	..... San José
Red	Amelia 12th	.....	.....	C. Younger & Son	..... San José
Red	Oxford Rose 8th	.....	.....	C. Younger & Son	..... San José
Red	Jessie Maynard	.....	.....	C. Younger & Son	..... San José
Red	24th Rose of Forest Home	.....	.....	C. Younger & Son	..... San José
CLASS II—JERSEYS AND GUERNSEYS.					
<i>Bulls—Three Years Old and Over.</i>					
Fawn	Keystone (346)	Paragon (84)	Katie (179)	John McIntyre	Brighton.
Fawn	Vim of Yerba Buena (409)	Champion of Guernsey	Little Nell of Guernsey	Henry Pierce	San Francisco.
Fawn and wh.	Victor of Yerba Buena (11964)	William of Seitate (6399)	Monplaisir (12622)	Henry Pierce	San Francisco.
Blk and gr'y	Pino (331)	Mento Park (143)	Corita (P. C., 121)	E. W. Maslin	..... Pino.
Dark fawn	Boliver M (332)	Major (200)	Bessie (507)	E. F. Alken	Sacramento.
<i>Bulls—Two Years Old.</i>					
Dark fawn	Atlas of Yerba Buena (14918)	Jack Lowe (7518)	Alta of Y. B. (20827)	Henry Pierce	San Francisco.
Dark fawn	Billy Ralston	William	Milton of Forest Grove	P. C. Anderson	Oakland.
Dark	Warwick (301)	Jersey Duke 18th	Ida H	Jas. Askew	El Dorado.
<i>Bulls—One Year Old.</i>					
Dark fawn	Sir Waller	Alameda Chief (9986)	Lalla Rookh (3013)	Henry Pierce	San Francisco.
Fawn and wh.	Gladstone (421)	Boliver M (332)	Mattie (485)	A. L. Nichols	Sacramento.
Blk and gr'y	Prince of Oakland	Lawgiver (14970)	Adaline Patti	P. C. Anderson	Oakland.
<i>Bulls—Calves.</i>					
Fawn	Arthur	Lawgiver (14970)	Diana	A. C. Jelly	Sacramento.
Gray	McIntyre	Keystone	Fairy	J. A. McIntyre	Brighton.
Dark fawn	Bump of Yerba Buena	Adas Perrot (14300)	Comassie (30842)	Henry Pierce	San Francisco.
Dark fawn	Blackstone (422)	Boliver M (332)	Daisy F (751)	A. L. Nichols	Sacramento.
Dark fawn	Livingston (423)	Ben Lomond (341)	Dina A (193)	A. L. Nichols	Sacramento.
<i>Cows—Three Years Old and Over.</i>					
Fawn	Diana	Touchstone	Pauline	A. C. Jelly	Sacramento.
Fawn	Fairy	Exponnder	Olive	J. A. McIntyre	Brighton.
Fawn and wh.	Etolka (2018)	Son of Yerba Buena (443)	Polly of Guernsey (420)	Henry Pierce	San Francisco.
Light fawn	Susan Titus (16754)	Merced (2906)	Bettie (2909)	Henry Pierce	San Francisco.

Gray fawn	Carrie of Yerba Buena (17225)	Victor of Y. B. (3809)	Carrie of Y. B. (15481)	Henry Pierce	San Francisco.
Gray fawn	Olga of Yerba Buena (25532)	William Scituate (6299)	Una of Y. B. (17227)	Henry Pierce	San Francisco.
Light fawn	Mirabelle (98)	Sanky (56)	Creole Belle (86)	A. L. Nichols	Sacramento.
Dark fawn	Flora Nix (24018)	Senator (4017)	Mollie of Marin (11053)	A. L. Nichols	Sacramento.
Gray	Adeline Patti	William	Jersey	P. C. Anderson	Oakland.
Fawn	Bonillo	Modoc	Bessie	P. C. Anderson	Oakland.
Light fawn	Lady Mart	Glory of Pacific	Jennie Jones	P. C. Anderson	Oakland.
Fawn	Jersey Belle (126)	Surprise	Poody	James Askew	El Dorado.
Fawn	Jersey Queen (139)	General Grant	Jersey Belle	James Askew	El Dorado.
Gray	Duchess of El Dorado (666)	General Grant	1st Duchess of El Dorado	James Askew	El Dorado.
Gray	Daisy (851)	1st Duke of El Dorado	Jersey Belle	James Askew	El Dorado.
Light cream	Irene of Staatsburg (2889)	Hector of Plymouth (886)	Ida 3d (2254)	W. C. Smith	Florin.
Gray	Moralita (234)	Discovery	Lady Lila	E. W. Maslin	Pino.
Gray	Duchess of El Dorado	Duke of El Dorado		Burt M. Hodson	Sacramento.
<i>Cows—Two Years Old.</i>					
Brown	Muriel	Jersey Prince	Diana	A. C. Jelly	Sacramento.
Brown and wh.	Alimo	Arabi of Yerba Buena	Daisy	Henry Pierce	San Francisco.
Silver fawn	Queen of Yerba Buena (33871)	Silver Cloud's Son (7899)	Monplaiser (12622)	Henry Pierce	San Francisco.
Light fawn	Comassie of Yerba Buena (30812)	Silver Cloud's Son (7899)	Comassie of Y. B. (17223)	Henry Pierce	San Francisco.
Gray fawn	Princess of Sacramento (892)	Jersey Prince (92)	Dina A (193)	A. L. Nichols	Sacramento.
Dark gray	Lady Anderson	William	Phillis	P. C. Anderson	Oakland.
<i>Cows—One Year Old.</i>					
Fawn	Fannie	Jersey Prince	Diana	A. C. Jelly	Sacramento.
Lenon	Nova	Fred Baker	Jersey Belle	F. P. Lowell	Sacramento.
Fawn and wh.	Polyanthus of Yerba Buena	Arabi of Yerba Buena (470)	Polly of Guernsey (420)	Henry Pierce	San Francisco.
Fawn and wh.	Pansy of Yerba Buena (3069)	Altmont of Y. B. (610)	Polly of Guernsey (420)	Henry Pierce	San Francisco.
Dark fawn	Comassie 3d of Yerba Buena (38819)	Pedro Dirigo of Y. B. (14971)	Comassie of Y. B. (17223)	Henry Pierce	San Francisco.
Dark fawn	Don's Coquette of Yerba Buena (38813)	Don of Yerba Buena (7919)	Coquette of Y. B. (12624)	Henry Pierce	San Francisco.
Dark fawn	Bly of Yerba Buena (38817)	Swanson (14276)	Carrie of Y. B. (15481)	Henry Pierce	San Francisco.
<i>Heifers—Calves.</i>					
Fawn and wh.	Ethel of Yerba Buena (3269)	Arabi of Yerba Buena (470)	Etelka of Y. B. (2018)	Henry Pierce	San Francisco.
Gray fawn	Jennie of Yerba Buena	Jack Lowe (7518)	Princess of Y. B. (12626)	Henry Pierce	San Francisco.
Fawn	Belle Bria (901)	Ben Lomond (341)	Mirabelle (98)	A. L. Nichols	Sacramento.
Light fawn	Golden Gate	Billy Ralston	Lady Anderson	P. C. Anderson	Oakland.
Lenon	Martha of Florin (45016)	Lawgiver (14970)	Irene of Staatsburg (2889)	W. C. Smith	Florin.
Gray	Duchess 2d		Duchess of El Dorado	Burt M. Hodson	Sacramento.
<i>Herds—Over Two Years Old.</i>					
Dark fawn	Atlas of Yerba Buena	Jack Lowe (7518)	Alta of Y. B. (20827)	Henry Pierce	San Francisco.
Light fawn	Susan Titus	Merced (2306)	Betty (2306)	Henry Pierce	San Francisco.
Gray fawn	Olga of Yerba Buena	William Scituate (6299)	Una of Y. B. (72217)	Henry Pierce	San Francisco.
Gray fawn	Carrie of Yerba Buena	Victor of Y. B. (3809)	Carrie of Y. B. (15480)	Henry Pierce	San Francisco.

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Gray fawn	Queen of Yerba Buena.	Silver Cloud's Son (7899)	Monplaisir of Y. B. (12622)	Henry Pierce	San Francisco.
Dark gray	Billy Ralston	William	Milton of Forest Grove	P. C. Anderson	Oakland.
Gray	Adeline Patti	William	Jersey	P. C. Anderson	Oakland.
Lemon	Bonillo	Moore	Bessie	P. C. Anderson	Oakland.
Lemon	Lady Mart	Glory of the Pacific	Jennie June	P. C. Anderson	Oakland.
Dark gray	Lady Anderson	William	Phillis	P. C. Anderson	Oakland.
<i>Heads—Under Two Years Old.</i>					
Dark fawn	Sir Walter	Alameda Chief (9986)	Lalla Rookh (3013)	Henry Pierce	San Francisco.
Dark fawn	Don's Coquette	Don of Y. B. (7919)	Croquette of Y. B. (12624)	Henry Pierce	San Francisco.
Dark fawn	Bly of Yerba Buena	Swanson (11276)	Carrie of Y. B. (15181)	Henry Pierce	San Francisco.
Orange fawn	Polyanthus of Yerba Buena	Arabi of Y. B. (170)	Polly of Guernsey (429)	Henry Pierce	San Francisco.
Dark fawn	Comassie of Yerba Buena	Pedro Drigo.	Comassie of Y. B. (17223)	Henry Pierce	San Francisco.
CLASS IV—AYRESHIRE.					
<i>Bulls—Two Years Old.</i>					
Red and wh.	Ethelbert (4313).	Melancthon (3435)	Ethel Brown (4504)	G. Bement & Son.	Redwood City.
<i>Bulls—One Year Old.</i>					
Red and wh.	Lord Faxon (4314)	Archie (3432)	Lady Faxon (7551)	G. Bement & Son.	Redwood City.
<i>Bulls—Calves.</i>					
Red	Red Mikado (4315)	Electa (4516)	Marion (7408)	G. Bement & Son	Redwood City.
Red and wh.	Hotspar	Archie (3432)	Hildina (7593)	G. Bement & Son.	Redwood City.
<i>Cows—Three Years Old and Over.</i>					
Red	Elaine (7401)	Adonis (2989)	Ethel Douglas (3469)	G. Bement & Son.	Redwood City.
Red	Marion (7408)	Archie (3432)	Marion (2905)	G. Bement & Son.	Redwood City.
Red and wh.	Sybella (7809)	Archie (3432)	Sybil (7404)	G. Bement & Son.	Redwood City.
<i>Cows—Two Years Old.</i>					
Red and wh.	Sylph (8033)	Archie (3432)	Sybil (7404)	G. Bement & Son.	Redwood City.
<i>Cows—One Year Old.</i>					
Red and wh.	Ethel Berla (9519)	Melancthon (3435)	Ethel Brown (4504)	G. Bement & Son.	Redwood City.
<i>Heifers—Calves.</i>					
Red and wh.	Faxonia (9021)	Archie (3432)	Lady Faxon (7551)	G. Bement & Son.	Redwood City.

Heads—Of Any Age.

Red and wh.
Red
Red
Red
Red
Red and wh.

Lord Faxon
Elaine
Marion
Sybilla
Sybilla

Lady Faxon (7551)
Ethel Douglas (3469)
Marion (2905)
Sybil (7404)
Sybil (7404)

G. Bement & Son.
G. Bement & Son.
G. Bement & Son.
G. Bement & Son.
G. Bement & Son.

Redwood City.
Redwood City.
Redwood City.
Redwood City.
Redwood City.

CLASS V—HEREFORDS.

Bulls—Three Years Old and Over.

Red and wh.
Red and wh.

Novelist.
Horace 30th.

Downton's Grand Duke.
Horace 3d (5386).

Jas. Kay
H. M. LaRue.

Sacramento.
Sacramento.

Bulls—Two Years Old.

Red and wh.
Red and wh.
Red and wh.

Lamar (25759)
Storm King (27851)
Lord Wilton 2d.

Compton Belle.
Melody
Curly

Geo. F. Morgan
Geo. F. Morgan
Jas. Kay

Cheyenne, W. Y. T.
Cheyenne, W. Y. T.
Sacramento.

Bulls—One Year Old.

Red and wh.
Red and wh.

Marsh
Duke of Hereford

Geo. F. Morgan
Jas. Kay

Cheyenne, W. Y. T.
Sacramento.

Bulls—Calves.

Red and wh.
Red and wh.
Red and wh.

Mahmoud
Monmouth
Grand Duke

Geo. F. Morgan
Geo. F. Morgan
Jas. Kay

Cheyenne, W. Y. T.
Cheyenne, W. Y. T.
Sacramento.

Cows—Three Years Old and Over.

Red and wh.
Red and wh.
Red and wh.
Red and wh.
Red and wh.

Clara Rudolph (25057)
Winona (25055)
Wilding 6th.
Turtledove
Melvern Mary (17680)

Empress 3d.
Cowslip
Wilding 2d.
Tiny
Gentle Mary (17049).

Geo. F. Morgan
Geo. F. Morgan
Jas. Kay
Jas. Kay
H. M. LaRue.

Cheyenne, W. Y. T.
Cheyenne, W. Y. T.
Sacramento.
Sacramento.
Sacramento.

Cows—Two Years Old.

Red and wh.
Red and wh.
Red and wh.
Red and wh.

Sylvan (25826)
Duchess 3d
Mermaid 3d
Brinsop Lass 2d.

Geo. F. Morgan
Jas. Kay
Jas. Kay
Jas. Kay

Cheyenne, W. Y. T.
Sacramento.
Sacramento.
Sacramento.

Cows—One Year Old.

Red and wh.
Red and wh.
Red and wh.

Mabel
Marca
Bounce

Rosemary
Modesty
Bountiful

George F. Morgan
George F. Morgan
Jas. Kay

Cheyenne, W. Y. T.
Cheyenne, W. Y. T.
Sacramento.

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Red and wh.	Rosebud 7th <i>Heifers—Cubs.</i>	Prince (28006)	Rosebud 6th (22763)	H. M. LaRue	Sacramento.
Red and wh.	Moss Rose (29339)	Deacon (25561)	Spot	George F. Morgan	Cheyenne, W. T.
Red and wh.	Myriad (29342)	Deacon (25561)	Bitter Sweet	George F. Morgan	Cheyenne, W. T.
Red and wh.	Lacy	William the Conqueror (27706)	Clara Rudolph	George F. Morgan	Cheyenne, W. T.
Red and wh.	Bonnie	Novelist	Bountiful	Jas. Kay	Sacramento.
<i>Herd— of Any Age.</i>					
Red and wh.	Lamar			George F. Morgan	Cheyenne, W. T.
Red and wh.	Clara Rudolph			George F. Morgan	Cheyenne, W. T.
Red and wh.	Winona			George F. Morgan	Cheyenne, W. T.
Red and wh.	Sylvan			George F. Morgan	Cheyenne, W. T.
Red and wh.	Mabel			George F. Morgan	Cheyenne, W. T.
Red and wh.	Novelist		Daydream	Jas. Kay	Sacramento.
Red and wh.	Turtledove	Downton Grand Duke	Tiny	Jas. Kay	Sacramento.
Red and wh.	Duchess 3d	Novelist	Duchess	Jas. Kay	Sacramento.
Red and wh.	Mermaid 3d	Novelist	Mermaid 2d	Jas. Kay	Sacramento.
Red and wh.	Brinsop Lass 2d	Novelist	Brinsop Lass	Jas. Kay	Sacramento.
CLASS VI—HOLSTEIN.					
<i>Bulls—Three Years Old and Over.</i>					
Bl'k and wh.	Mahomet of Palo Alta (2688)	Mahomet 3d (1259)	Clarissa (2288)	L. Stanford	Vina.
Bl'k and wh.	Sedro (3168)	Herder (2831)	Anje Laan (4237)	Frank H. Burke	Menlo Park.
<i>Bulls—Two Years Old.</i>					
Bl'k and wh.	Nadine Veenan (4404)	Wiebren Veenan (2406)	Nadine (5540)	L. Stanford	Vina.
Bl'k and wh.	San Miguel (1226)	Sir Henry 2d of Augge (4451)	Bertholda	L. Stanford	Vina.
Bl'k and wh.	Oro Blanco (348)	Peter	Ontong	J. H. White	Lakeville.
Bl'k and wh.	Leicester (749)	Jacobus	Litty	J. H. White	Lakeville.
Bl'k and wh.	Jacob's Lisbon	Jacob (608)	Yolo Mayo (7582)	Frank H. Burke	Menlo Park.
Bl'k and wh.	Billie Taylor (1326)	Hendrick Heurel (3136)	Luitje Jongens (6441)	Frank H. Burke	Menlo Park.
Bl'k and wh.	Kingsburg (371)	Case (3135)	Klaasje Peterson (6423)	Frank H. Burke	Menlo Park.
<i>Bulls—One Year Old.</i>					
Bl'k and wh.	Shackelford (61581)	Young Kurt (2691)	Partella (6981)	L. Stanford	Vina.

Bl'k and wh.	Tomodley (6164)	Young Kurt (2691)	Pansyne	L. Stanford	Vina.
Bl'k and wh.	Laurin (3801)	Usurper	Letta	J. H. White	Lakeville.
Bl'k and wh.	Huachuca	Prince of Harlem	Hoffnung	J. H. White	Lakeville.
Bl'k and wh.	Omaha (3229)	Prince Imperial (1164)	Rosabel Lincoln	Frank H. Burke	Menlo Park.
Bl'k and wh.	Von Molke (2225)	Sir Henry 2d of Auggie (1451)	Portia Lincoln	Frank H. Burke	Menlo Park.
<i>Bulls—Culres.</i>					
Bl'k and wh.	Bonita Prince (6170)	Minellas Prince (1218)	May Bonita (1509)	L. Stanford	Vina.
Bl'k and wh.	Duke of Palo Alto (6171)	Mahomet of Palo Alto (2988)	Theora (5527)	L. Stanford	Vina.
Bl'k and wh.	Mateo	Usurper	Muttertrue	J. H. White	Lakeville.
Bl'k and wh.	Lomitas	Usurper	Litty	J. H. White	Lakeville.
Bl'k and wh.	King of Menlo (6197)	Romley (3249)	Lena Menlo (2840)	Frank H. Burke	Menlo Park.
<i>Cows—Three Years Old and Over.</i>					
Bl'k and wh.	Clara Hamilton (4560)	Imported		L. Stanford	Vina.
Bl'k and wh.	Pansyne (3923)	Imported		L. Stanford	Vina.
Bl'k and wh.	Annenie (8026)	Bismarck	Wietke	J. H. White	Lakeville.
Bl'k and wh.	Winridala (8042)	Alfred	Wietke	J. H. White	Lakeville.
Bl'k and wh.	Letta (8028)	Leaguater	Klausje	J. H. White	Lakeville.
Bl'k and wh.	Dagodine (8042)	District Bull of Solomon.	Emma I.	J. H. White	Lakeville.
Bl'k and wh.	Wayward (1499)	Simon	Leifje	J. H. White	Lakeville.
Bl'k and wh.	Annot Layle (1498)	Simon	Antje	J. H. White	Lakeville.
Bl'k and wh.	Lena Wit Menlo (987)	Dist Bull of Sterlington	Lena	Frank H. Burke	Menlo Park.
Bl'k and wh.	Sylvia (3954)	Boersman's Bull	Bontje	Frank H. Burke	Menlo Park.
Bl'k and wh.	Kollie Lincoln (5396)	Imported		Frank H. Burke	Menlo Park.
Bl'k and wh.	Thissa (9579)	Jocem	Stuns	Frank H. Burke	Menlo Park.
<i>Cows—Two Years Old.</i>					
Bl'k and wh.	Gorgia Truman (1517)	Prince Imperial (1164)	Jacob Wit Blanquette (6957)	L. Stanford	Vina.
Bl'k and wh.	Aaggie Alpha 2d (2640)	Sir Howard Aaggie (2485)	Aaggie Alpha (4334)	L. Stanford	Vina.
Bl'k and wh.	Ocala (392)	Pictet	Olinika	J. H. White	Lakeville.
Bl'k and wh.	Darkness	Usurper	Dagodine	J. H. White	Lakeville.
Bl'k and wh.	Edna of Troy (603)	Violet King	Kientje (5357)	Frank H. Burke	Menlo Park.
<i>Cows—One Year Old.</i>					
Bl'k and wh.	Aeneid (3668)	Weilren Veenan (2406)	Lady Anslys	L. Stanford	Vina.
Bl'k and wh.	Mogenia (3672)	Mahomet of Pa. Alto (2688)	Mycale (8898)	L. Stanford	Vina.
Bl'k and wh.	Sierra (4678)	Usurper	Sjoumenda	J. H. White	Lakeville.
Bl'k and wh.	Lascoquite (4673)	Usurper	Looodarda	J. H. White	Lakeville.
Bl'k and wh.	Thissette (7839)	Jacob (608)	Thissa (9579)	Frank H. Burke	Menlo Park.
Bl'k and wh.	Wiscasset	Aaggie's Adline 4th Ro-land (3122)	Artis Carissa (7798)	Frank H. Burke	Menlo Park.

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
<i>Heifers—Calves.</i>					
Blk and wh.	Mecox (7411)	Lenoine (3151)	Lady Anstys (6972)	L. Stanford	Vina.
Blk and wh.	Mahomet Lass (7412)	Mahomet of Pa. Alto (2688)	Netherland Lass (6736)	L. Stanford	Vina.
Blk and wh.	Bumblebee	Usurper	Burgia	J. H. White	Lakeville.
Blk and wh.	Chiquita	Usurper	Choice	J. H. White	Lakeville.
Blk and wh.	Kentucky Princess	Sedro (3168)	Kentucky Gem (6490)	Frank H. Burke	Menlo Park.
<i>Heeds—Of Any Age.</i>					
Blk and wh.	Mahomet of Palo Alto (2688)	Mahomet 3d (1259)	Clarissa (2288)	L. Stanford	Vina.
Blk and wh.	Clarissa (2288)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Pansyue (6923)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Pietje Pier-sma (5478)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Mycale (6898)	Imported	Ontong	L. Stanford	Vina.
Blk and wh.	Oro Blanco	Pieter	Klausje	J. H. White	Lakeville.
Blk and wh.	Letta	Leegwater	Wieske	J. H. White	Lakeville.
Blk and wh.	Wintridala	Alfred	Emma 1	J. H. White	Lakeville.
Blk and wh.	Pagodine	Bull of Solomon	Loowarda	J. H. White	Lakeville.
Blk and wh.	Lasquite	Usurper	Antji Loan (4237)	Frank H. Burke	Menlo Park.
Blk and wh.	Sedro (3168)	Herder (2331)	Stins	Frank H. Burke	Menlo Park.
Blk and wh.	Thissa (9397)	Jochen	Imported	Frank H. Burke	Menlo Park.
Blk and wh.	Kollie Lincoln (5496)	Imported	Bontje	Frank H. Burke	Menlo Park.
Blk and wh.	Sylpha (3914)	Boreman's Bria	Lena	Frank H. Burke	Menlo Park.
Blk and wh.	Lena Wit Menlo (957)	Dis. Bull of Schelington			
CLASS VIII—GRADED CATTLE.					
<i>Cows—Three Years Old and Over.</i>					
Brown	Jennie	Kirklevington Chief	Magic	Willie Tryon	Sacramento.
Roan	Musie			Robt. Ashburner	Badens.
<i>Cows—Two Years Old.</i>					
Br. and wh.	Daisy	Fawsley 2d	Bright Butterfly	Willie Tryon	Sacramento.
Red and wh.	Bright Beauty			Robt. Ashburner	Badens.
<i>Cows—One Year Old.</i>					
Mouse	Kittie	Baden Duke 7th	Nectarine Blossom	Willie Tryon	Sacramento.
Roan	Peach Blossom			Robt. Ashburner	Badens.

Heifers—Calves.

Blk and wh.	Lulu	Weibren Veeman (2405)	Unknown	L. Stanford	Vina
Gray	Pet	4th Duke of El Dorado	Gillyflower	Jas. Askew	El Dorado
Road	Gulliver	Milkman		Robt. Ashburner	Badens
CLASS IX—SWEEPSTAKES.					
<i>Bulls—Of Any Age or Breed.</i>					
Red	Mugwump (Durham)	Kirklevington Carol	Belle Medico	Wilford Page	Penn's Grove
Red	Counselor (Durham)	Oxford Duke	Xylophia 5th	P. Peterson	Sites
Red	Oxford Bull 2d (Durham)	Duke of Kirklevington	3d Oxford Rose	R. M. Dunlap	Galesburg, Ill.
Red and wh.	3d Kirklevington of F. H. (Durham)			C. Younger & Son	San José
Red and wh.	Lamar (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
Red and wh.	Novelist (Hereford)			Jas. Kay	Sacramento
<i>Cows—Of Any Age or Breed.</i>					
Road	Maita (Durham)	Kirklev'ton Prince (90216)	Madie	Wilford Page	Penn's Grove
Red and wh.	Xylophia 6th (Durham)	Logan (39229)	Xylophia 5th	H. C. Moore	Visalia
Red	10th Rose of Forest Home (Durham)	2d Duke of Alameda	2d Rose of Forest Home	C. Younger & Son	San José
Red and wh.	Winona (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
<i>Bull and Three of his Calves—Under One Year Old.</i>					
Red	Counselor (Durham)			P. Peterson	Sites
Red	Sullivan (Durham)			P. Peterson	Sites
Red	Syoc (Durham)			P. Peterson	Sites
Red	Mayduke (Durham)			P. Peterson	Sites
Red	Duke of Kirklevington (Durham)			C. Younger & Son	San José
Red	29th Kirklevington (Durham)			C. Younger & Son	San José
Red	30th Kirklevington (Durham)			C. Younger & Son	San José
Red	Oxford Rose 11th (Durham)			C. Younger & Son	San José
Red and wh.	Novelist (Hereford)			Jas. Kay	Sacramento
Red and wh.	Bonnie (Hereford)			Jas. Kay	Sacramento
Red and wh.	Dotsie (Hereford)			Jas. Kay	Sacramento
Red and wh.	Grand Duke (Hereford)			Jas. Kay	Sacramento
CLASS X—HERD SWEEPSTAKES.					
<i>Beef Breeds—Herd to consist of One Bull and Four Cows or Heifers.</i>					
Red	Mugwump (Durham)	Kirklevington Carol (90217)	Belle Medico	Wilford Page	Penn's Grove
Road	Maita (Durham)	Kirklev'ton Prince (20216)	Madie	Wilford Page	Penn's Grove
Red	Belle of Sonoma (Durham)	Sonoma (18356)	Belle Napier	Wilford Page	Penn's Grove
Red	Carolina (Durham)	Catchpenny (59107)	Caroline Airdrie	Wilford Page	Penn's Grove

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Red	Belle Medico (Durham)	El Medico	Belle Napier	Wilford Page	Penn's Grove.
Red	3d Kirklevington of F. II. (Durham)			C. Younger & Son	San José.
Red	Red Dolly 2d (Durham)			C. Younger & Son	San José.
Red	16th Red Dolly (Durham)			C. Younger & Son	San José.
Red	4th Oxford Rose (Durham)			C. Younger & Son	San José.
Red	10th Rose of Forest Home (Durham)			C. Younger & Son	San José.
Red and wh.	Lamar (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
Red and wh.	Winona (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
Red and wh.	Sylvan (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
Red and wh.	Meggy (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
Red and wh.	Marcia (Hereford)			Geo. F. Morgan	Cheyenne, W. T.
Red and wh.	Novelist (Hereford)			Jas. Kay	Sacramento.
Red and wh.	Turtledove (Hereford)			Jas. Kay	Sacramento.
Red and wh.	Duchess 3d			Jas. Kay	Sacramento.
Red and wh.	Merman 3d			Jas. Kay	Sacramento.
Red and wh.	Brinsop Lass 2d			Jas. Kay	Sacramento.
<i>Milk Breeds—Herd to consist of One Bull and Four Cows or Heifers.</i>					
Blk and wh.	San Miguel (1220), (Holstein)	Sir Henry of Aaggie (1151)	Bertholda (6800)	L. Stanford	Vina.
Blk and wh.	Clara Hamilton (1500), (Holstein)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Pansyne (6325), (Holstein)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Piedje Piersma (5178), (Holstein)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Mycale (6898)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Sedro (3168), (Holstein)	Herder (2531)	Antje Laan (1257)	Frank H. Burke	Menlo Park.
Blk and wh.	Lena Wit Menlo (987), (Holstein)	Dis. Bull of Schelington	Lena	Frank H. Burke	Menlo Park.
Blk and wh.	Sylpha (6961), (Holstein)	Boersman's Bull	Pontje	Frank H. Burke	Menlo Park.
Blk and wh.	Kollie Lincoln (5395), (Holstein)	Imported	Imported	Frank H. Burke	Menlo Park.
Blk and wh.	Thissa (9679), (Holstein)	Jochem	Stins	Frank H. Burke	Menlo Park.
CLASS XI—MILCH COWS SWEETSTAKES.					
<i>Of any Age or Breed.</i>					
Blk and wh.	Sylpha (6961), (Holstein)	Imported	Imported	Frank H. Burke	Menlo Park.
Blk and wh.	Piedje Piersma (5178), (Holstein)	Imported	Imported	L. Stanford	Vina.
Blk and wh.	Pansyne (6325), (Holstein)	Imported	Imported	L. Stanford	Vina.

FIRST DEPARTMENT—Continued.

SHEEP.

NAME.	OWNER.	Residence.
CLASS I—SPANISH MERINOS.		
<i>Rams—Two Years Old and Over.</i>		
Lott	Kirkpatrick & Whittaker	Knights Ferry.
King George	F. Bullard	Woodland.
<i>Rams—One Year Old and under Two.</i>		
Gladstone	F. Bullard	Woodland.
<i>Three Ram Lambs.</i>		
One pen	F. Bullard	Woodland.
<i>Pen of not less than Five Ewes, Two Years Old and Over.</i>		
One pen	F. Bullard	Woodland.
<i>Pen of not less than Five Ewes, One Year Old and under Two.</i>		
One pen	F. Bullard	Woodland.
<i>Pen of not less than Five Ewe Lambs.</i>		
One pen	F. Bullard	Woodland.
<i>Ram and Five of his Lambs.</i>		
King George, and five lambs	F. Bullard	Woodland.
CLASS II—FRENCH MERINOS.		
<i>Rams—Two Years Old and Over.</i>		
Bulger	James Roberts	Irvington.
<i>Rams—One Year Old and under Two.</i>		
Sultan	James Roberts	Irvington.
<i>Three Lamb Rams.</i>		
One pen	James Roberts	Irvington.
<i>Pen of not less than Five Ewes, Two Years Old and Over.</i>		
One pen	James Roberts	Irvington.
<i>Pen of not less than Five Ewes, One Year Old and under Two.</i>		
One pen	James Roberts	Irvington.
<i>Pen of not less than Five Ewe Lambs.</i>		
One pen	James Roberts	Irvington.
<i>Ram and Five of his Lambs.</i>		
One pen	James Roberts	Irvington.
CLASS III—SOUTHDOWN.		
<i>Ram of any Age.</i>		
Dick	Geo. Bement & Son	Redwood City.
<i>Pen of Ewes, not less than Five, of any Age.</i>		
One pen	Geo. Bement & Son	Redwood City.
<i>Ram and Five of his Lambs.</i>		
One pen	Geo. Bement & Son	Redwood City.
CLASS IV—LEICESTERSHIRE AND COTSWOLD.		
<i>Rams of any Age.</i>		
Faraway	C. Younger & Son	San José.
Primus	Frank H. Burke	Menlo Park.

FIRST DEPARTMENT—Continued.

NAME.	Owner.	Residence.
<i>Pen of Ewes, not less than Five, of any Age.</i>		
One pen	C. Younger & Son	San José.
<i>Ram and Five of his Lambs.</i>		
One pen	C. Younger & Son	San José.
CLASS V—SHROPSHIRE.		
<i>Rams of any Age.</i>		
Freeland	J. H. Glide	Sacramento.
Royal Duke of California	Andrew Smith	Redwood City.
Royal Prince	Andrew Smith	Redwood City.
Excelsior	Frank H. Burke	Menlo Park.
<i>Pen of Ewes, not less than Five, of any Age.</i>		
One pen	Andrew Smith	Redwood City.
<i>Ram and Five of his Lambs.</i>		
One pen	Andrew Smith	Redwood City.
CLASS VI—SWEEPSTAKES.		
<i>Ram of any Age or Breed and Five of his Lambs.</i>		
Bulger and five lambs	James Roberts	Irvington.
King George and five lambs	F. Bullard	Woodland.

ANGORA GOATS.

NAME.	Owner.	Residence.
THOROUGHBREDS.		
<i>Bucks—Two Years Old and Over.</i>		
Mahomet (1154)	Julius Weyand	Colusa.
Grant (62)	Julius Weyand	Colusa.
Garfield, Jr. (78)	Julius Weyand	Colusa.
Oriand	M. Wick	Oroville.
Governor Helm	T. H. Harlan	Williams.
Captain Shirland	T. H. Harlan	Williams.
<i>Bucks—Under Two Years Old.</i>		
Mahomet, Jr. (99)	Julius Weyand	Colusa.
Sheridan (510)	Julius Weyand	Colusa.
Towhead (523)	Julius Weyand	Colusa.
Prince Albert	M. Wick	Oroville.
Prince Albert 2d	M. Wick	Oroville.
Prince Albert 3d	M. Wick	Oroville.
Prince Albert 4th	M. Wick	Oroville.
Prince Albert 5th	M. Wick	Oroville.
Prince Albert 6th	M. Wick	Oroville.
Orlando	M. Wick	Oroville.
Gilmore	T. H. Harlan	Williams.
<i>Pen of not less than Three Does, Two Years Old and Over.</i>		
Two pens	Julius Weyand	Colusa.
One pen	T. H. Harlan	Williams.
<i>Pen of not less than Three Does, under Two Years.</i>		
Two pens	Julius Weyand	Colusa.
One pen	T. H. Harlan	Williams.
GRADED.		
<i>Pen of not less than Three Does, Two Years Old and Over.</i>		
One pen	T. H. Harlan	Williams.

FIRST DEPARTMENT—Continued.

NAME.	Owner.	Residence.
<i>Pen of not less than Three Does, under Two Years.</i>		
One pen	T. H. Harlan	Williams.
<i>Herd of not less than Ten, of any Age or Breed.</i>		
One pen of ten	Julius Weyand	Colusa.
One pen of ten	T. H. Harlan	Williams.

SWINE.

NAME.	Owner.	Residence.
CLASS I—BERKSHIRE.		
<i>Boars—Two Years Old and Over.</i>		
Redwood	Andrew Smith	Redwood City.
<i>Boars—One Year and under Two Years.</i>		
Young Prince	Jno. Kennedy	Sacramento.
Wm. Corbitt	Thos. Waite	Perkins.
Falkland	Andrew Smith	Redwood City.
<i>Boars—Six Months Old and under One Year.</i>		
Redwood Duke 3d	Andrew Smith	Redwood City.
Redwood Duke 4th	Andrew Smith	Redwood City.
<i>Breeding Sows—Two Years Old and Over.</i>		
Redwood Sallie	Andrew Smith	Redwood City.
Princess	Andrew Smith	Redwood City.
<i>Sows—One Year Old and Under Two.</i>		
Lady Smith	Thos. Waite	Perkins.
Redwood Duchess	Andrew Smith	Redwood City.
Redwood Sallie 2d	Andrew Smith	Redwood City.
<i>Six Months Old and Under One Year.</i>		
Redwood Sallie 3d	Andrew Smith	Redwood City.
Redwood Sallie 4th	Andrew Smith	Redwood City.
<i>Sow and Six Pigs Under Three Months Old.</i>		
Redwood Princess	Andrew Smith	Redwood City.
Redwood Lass 2d	Andrew Smith	Redwood City.
<i>Pair of Pigs Under Six Months Old.</i>		
Cleveland	Andrew Smith	Redwood City.
Carletta	Andrew Smith	Redwood City.
Dandy	Andrew Smith	Redwood City.
Beauty	Andrew Smith	Redwood City.
CLASS II—ESSEX.		
<i>Boars—One Year Old and Under Two Years.</i>		
Tyler	Geo. Bement & Son	Redwood City.
<i>Breeding Sows—Two Years Old and Over.</i>		
Josie	Geo. Bement & Son	Redwood City.
<i>Sows—Six Months Old and Under One Year.</i>		
Peggy	Geo. Bement & Son	Redwood City.
CLASS III—POLAND—CHINA.		
<i>Breeding Sows—Two Years Old and Over.</i>		
Angela Golddust	Joseph Melvin	Davisville.
Bertha's Best	Joseph Melvin	Davisville.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

NAME.	Owner.	Residence.
<i>Sows—One Year Old and Under Two Years.</i>		
Beauty	Joseph Melvin.....	Davisville.
Beauty 2d.....	Joseph Melvin.....	Davisville.
Bessie	Joseph Melvin.....	Davisville.
Bessie 2d.....	Joseph Melvin.....	Davisville.
Bess	Joseph Melvin.....	Davisville.
Bess 4th.....	Joseph Melvin.....	Davisville.
Bang	Joseph Melvin.....	Davisville.
<i>Pair of Pigs—Under Six Months Old.</i>		
King and Lady	Joseph Melvin.....	Davisville.
SWINE—SWEEPSTAKES.		
<i>Boars—Of any Age or Breed.</i>		
Redwood Duke (Berkshire).....	Andrew Smith.....	Redwood City.
King (Poland-China)	Joseph Melvin.....	Davisville.
<i>Sows—Of any Age or Breed.</i>		
Bertha's Best (Poland-China).....	Joseph Melvin.....	Davisville.
Redwood Sallie (Berkshire).....	Andrew Smith.....	Redwood City.
<i>Pen of Six Pigs—Under Six Months.</i>		
One pen (Berkshire)	Andrew Smith.....	Redwood City.
One pen (Poland-China)	Joseph Melvin.....	Davisville.
<i>Family—All of same breed, consisting of One Boar, Two Sows, and Six Pigs.</i>		
Redwood Duke, } Redwood Duchess, } Redwood Sallie 2d, } And six pigs, }	Berkshire.....	Andrew Smith.....
		Redwood City

POULTRY.

NAME.	Owner.	Residence.
LIGHT BRAHMAS.		
<i>Cock and Hen.</i>		
One pair	M. W. Parker.....	Biggs.
<i>Cockerel and Pullet.</i>		
One pair.....	M. W. Parker.....	Biggs.
<i>Breeding Pen—To consist of One Male and Four Females.</i>		
One pen	M. W. Parker.....	Biggs.
DARK BRAHMAS.		
<i>Cock and Hen.</i>		
One pair.....	Thomas Waite.....	Perkins.
<i>Cockerel and Pullet.</i>		
One pair.....	Thomas Waite.....	Perkins.
<i>Breeding Pen—To consist of One Male and Four Females.</i>		
One pen	Thomas Waite.....	Perkins.
LANGSHANS.		
<i>Cock and Hen.</i>		
One pair.....	S. Katzenstein	Sacramento.
One pair.....	B. M. Hodson	Sacramento.
One pair.....	Thomas Waite	Perkins.

FIRST DEPARTMENT—Continued.

NAME.	Owner.	Residence.
<i>Cockerel and Pullet.</i>		
One pair	S. Katzenstein	Sacramento.
One pair	B. M. Hodson	Sacramento.
One pair	Thomas Waite	Perkins.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	Thomas Waite	Perkins.
One pen	S. Katzenstein	Sacramento.
BUFF COCHINS.		
<i>Cock and Hen.</i>		
One pair	M. W. Parker	Biggs.
<i>Cockerel and Pullet.</i>		
One pair	M. W. Parker	Biggs.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	M. W. Parker	Biggs.
PARTRIDGE COCHINS.		
<i>Cock and Hen.</i>		
One pair	M. W. Parker	Biggs.
<i>Cockerel and Pullet.</i>		
One pair	M. W. Parker	Biggs.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	M. W. Parker	Biggs.
PLYMOUTH ROCKS.		
<i>Cock and Hen.</i>		
One pair	Thos. Waite	Perkins.
<i>Cockerel and Pullet.</i>		
One pair	Thos. Waite	Perkins.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	Thos. Waite	Perkins.
BROWN LEGHORNS.		
<i>Cock and Hen.</i>		
One pair	H. L. Nichols	Sacramento.
<i>Cockerel and Pullet.</i>		
Two pair	Thos. Waite	Perkins.
One pair	H. L. Nichols	Sacramento.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	H. L. Nichols	Sacramento.
WHITE LEGHORNS.		
<i>Cock and Hen.</i>		
One pair	Thos. Waite	Perkins.
One pair	H. L. Nichols	Sacramento.
<i>Cockerel and Pullet.</i>		
One pair	M. W. Parker	Biggs.
One pair	Thos. Waite	Perkins.
One pair	H. L. Nichols	Sacramento.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	M. W. Parker	Biggs.
One pen	Thos. Waite	Perkins.
One pen	H. L. Nichols	Sacramento.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

NAME.	Owner.	Residence.
WHITE-FACED BLACK SPANISH.		
<i>Cock and Hen.</i>		
One pair	Thomas Waite	Perkins.
One pair	E. I. Robinson	Sacramento.
<i>Cockerel and Pullet.</i>		
One pair	Thomas Waite	Perkins.
One pair	E. I. Robinson	Sacramento.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	E. I. Robinson	Sacramento.
SILVER-SPANGLED HAMBURGS.		
<i>Cock and Hen.</i>		
One pair	Thomas Waite	Perkins.
<i>Cockerel and Pullet.</i>		
One pair	Thomas Waite	Perkins.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	Thomas Waite	Perkins.
POLISH.		
<i>Cock and Hen.</i>		
One pair	Thomas Waite	Perkins.
<i>Cockerel and Pullet.</i>		
One pair	Thomas Waite	Perkins.
WYANDOTTES.		
<i>Cock and Hen.</i>		
One pair	Thomas Waite	Perkins.
One pair	William N. Tracy	Sacramento.
<i>Cockerel and Pullet.</i>		
One pair	Thomas Waite	Perkins.
One pair	William N. Tracy	Sacramento.
<i>Breeding Pen—One male and Four Females.</i>		
One pen	Thomas Waite	Perkins.
One pen	William N. Tracy	Sacramento.
BLACK-BREADED RED GAME BANTAMS.		
<i>Cock and Hen.</i>		
Two pair	S. Katzenstein	Sacramento.
PIT GAMES.		
<i>Cock and Hen.</i>		
One pair	W. F. Smith	Sacramento.
One pair	M. W. Parker	Biggs.
<i>Breeding Pen—One Male and Four Females.</i>		
One pen	W. F. Smith	Sacramento.
Two pens	M. W. Parker	Biggs.
TURKEYS.		
<i>Bronze Turkeys.</i>		
One pair	Thos. Waite	Perkins.
GEESE.		
<i>Toulouse Geese.</i>		
One pair	Thos. Waite	Perkins.
One pair	Frank H. Burke	Menlo Park.

FIRST DEPARTMENT—Continued.

NAME.	Owner.	Residence.
DUCKS.		
<i>Rouen Ducks.</i>		
One pair	Thos. Waite	Perkins.
<i>Pekin Ducks.</i>		
One pair	Thos. Waite	Perkins.
One pair	Frank H. Burke	Menlo Park.

SECOND DEPARTMENT.

CLASS I—MACHINERY, ENGINES, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Stanton, Thomson & Co.	Sacramento	Rotary well pump.
Stanton, Thomson & Co.	Sacramento	Well pump (Myres patent).
Stanton, Thomson & Co.	Sacramento	Well pump (cyclone).
Pacific Manufacturing Co.	San Francisco	Apparatus for raising water for irrigating purposes.
Pacific Manufacturing Co.	San Francisco	Well pump.
Root, Neilson & Co.	Sacramento	Apparatus for raising water for irrigating purposes.
Root, Neilson & Co.	Sacramento	College City pump and horse-power combined.
Wm. Gutenberger	Sacramento	Model quartz crusher.
Parke & Lacy	San Francisco	Steam engine, forty horse-power.
San Francisco Tool Co.	San Francisco	Steam engine, twenty-five horse-power.
California Fence Co.	San Francisco	Machine for manufacturing field or garden fence.

CLASS II—AGRICULTURAL MACHINES.

FIRST DIVISION.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
A. & A. Heilbron	Sacramento	Horse hay rake.
A. & A. Heilbron	Sacramento	Hand corn sheller.
A. & A. Heilbron	Sacramento	Lawn mower.
Stanton, Thomson & Co.	Sacramento	Cider mill and press.
Stanton, Thomson & Co.	Sacramento	Horse hay rake.
Stanton, Thomson & Co.	Sacramento	Hay and straw cutter.
S. C. H. Agricultural Wk's.	Stockton	Lightning hay press.
Benicia Agricultural Wk's.	Benicia	Best display of agri- cultural machinery by any one house.
Baker & Hamilton	Sacramento	Thrashing machine.
Baker & Hamilton	Sacramento	Cider mill and press.
Baker & Hamilton	Sacramento	Horse hay rake.
Baker & Hamilton	Sacramento	Hay and straw cutter.
Baker & Hamilton	Sacramento	Power corn sheller.
Baker & Hamilton	Sacramento	Hand corn sheller.
Baker & Hamilton	Sacramento	Lawn mower.
G. G. Wickson & Co.	San Francisco	Hay and straw cutter.

SECOND DEPARTMENT—Continued.

CLASS III—AGRICULTURAL MACHINES.

SECOND DIVISION.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
A. & A. Heilbron	Sacramento	Cultivator.
Benicia Agricultural Wk's	Benicia	Header.
Baker & Hamilton	Sacramento	Combined header and thrasher.
Baker & Hamilton	Sacramento	Wheat drill.
Baker & Hamilton	Sacramento	Broad-cast sowing machine.
Baker & Hamilton	Sacramento	Mowing machine.
Baker & Hamilton	Sacramento	Combined reaper and mower.
Baker & Hamilton	Sacramento	Display of reaping and mowing machine knives.
Baker & Hamilton	Sacramento	Corn planter, hand power.
Baker & Hamilton	Sacramento	Potato planter.
Baker & Hamilton	Sacramento	Field roller and crusher.
Baker & Hamilton	Sacramento	One horse cultivator.
Baker & Hamilton	Sacramento	Cultivator.
Baker & Hamilton	Sacramento	Double shovel plow.
Benicia Agricultural Wk's	Benicia	Harrow.
Wm. Gutenberger	Sacramento	Field roller and crusher.
Baker & Hamilton	Sacramento	Horse hoe.
Farmers' Union	San José	Three mowing machines.
Mattison & Williamson	Stockton	Combined header and thrasher.
A. & A. Heilbron	Sacramento	Wheat drill.
A. & A. Heilbron	Sacramento	Mowing machine.
A. & A. Heilbron	Sacramento	Display of reaping and mowing machine knives.
A. & A. Heilbron	Sacramento	Grain broad-cast sowing machine.
A. & A. Heilbron	Sacramento	Self-binding harvester.
A. & A. Heilbron	Sacramento	Harrow.
A. & A. Heilbron	Sacramento	One horse cultivator.
A. & A. Heilbron	Sacramento	Horse hoe.
A. & A. Heilbron	Sacramento	Double shovel plow.
A. & A. Heilbron	Sacramento	Combined clod crusher.
P. P. Mast & Co.	Sacramento	Two mowing machines.
Holt Bros.	Stockton	Combined header and thrasher.
Stanton, Thomson & Co.	Sacramento	Wheat drill.
Stanton, Thomson & Co.	Sacramento	Grain broad-cast sowing machine.
Stanton, Thomson & Co.	Sacramento	Hay pitching machine.
Stanton, Thomson & Co.	Sacramento	Harrow.
Stanton, Thomson & Co.	Sacramento	Cultivator.
Stanton, Thomson & Co.	Sacramento	Corbing harrow.
S. C. H. Agricultural Wk's	Stockton	Combined header and thrasher.

CLASS IV—AGRICULTURAL IMPLEMENTS.

THIRD DIVISION.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
W. B. Wilshire	San Francisco	Platform scales.
W. B. Wilshire	San Francisco	Stock scales, for general purposes.
W. E. Mauldin	Sacramento	Farm gate.
Stanton, Thomson & Co.	Sacramento	Farm feed mill.
Stanton, Thomson & Co.	Sacramento	Windmill.
Pacific Manufacturing Co.	San Francisco	Windmill.
S. C. H. Agricultural Wk's	Stockton	Fanning mill.
S. C. H. Agricultural Wk's	Stockton	Grain cleaner (Independent).
Benicia Agricultural Wk's	Benicia	Farm feed mill.
Baker & Hamilton	Sacramento	Grain cleaning attachment for thrasher.
J. H. Ritchey	Redwood City	Model farm gate.
Daniel Best	San Leandro	Fanning mill.
Daniel Best	San Leandro	Grain cleaner (Independent).
John Klees	Sacramento	Fanning mill.
John Klees	Sacramento	Grain cleaner (Independent).
G. G. Wickson & Co.	San Francisco	Farm feed mill.

SECOND DEPARTMENT—Continued.

CLASS V TOOLS AND HOUSEHOLD IMPLEMENTS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
H. S. Jory	Stockton	Fruit drier.
Childs & Denehy	Acampo	Farm road scraper.
A. & A. Heilbron	Sacramento	Display of haying and harvesting tools.
A. & A. Heilbron	Sacramento	Sausage-meat cutter and stuffer.
Stanton, Thomson & Co.	Sacramento	Farm road scraper.
Baker & Hamilton	Sacramento	Display of haying and harvesting tools.
Baker & Hamilton	Sacramento	Garden seed drill.
E. W. Melvin	Sacramento	New Becker washing machine.
E. W. Melvin	Sacramento	Empire clothes wringer.
A. S. Hopkins & Bro.	Sacramento	Churn.
A. S. Hopkins & Bro.	Sacramento	Butter worker.
A. S. Hopkins & Bro.	Sacramento	Clothes horse.
A. S. Hopkins & Bro.	Sacramento	Clothes wringer.
Huntington, Hopkins & Co.	Sacramento	Cabbage cutter.
Huntington, Hopkins & Co.	Sacramento	Sausage-meat cutter and stuffer.
Huntington, Hopkins & Co.	Sacramento	Pruning shears.
G. G. Wickson & Co.	San Francisco	Stoddard churn.
G. G. Wickson & Co.	San Francisco	American churn.
G. G. Wickson & Co.	San Francisco	Taylor butter worker.
G. G. Wickson & Co.	San Francisco	Automatic butter worker.
G. G. Wickson & Co.	San Francisco	Cheese vat with heater.
D. Finch & Co.	Florin	Humboldt washing machine.

CLASS VI—PLOWS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
J. Kendrick	Willows	Gang plow.
James & Wm. Paterson	Stockton	Steam plow.
A. & A. Heilbron	Sacramento	Gang plow.
A. & A. Heilbron	Sacramento	Sulky plow.
A. & A. Heilbron	Sacramento	Stubble plow.
A. & A. Heilbron	Sacramento	Sod plow.
A. & A. Heilbron	Sacramento	Steel plow.
A. & A. Heilbron	Sacramento	Cast-iron plow.
A. & A. Heilbron	Sacramento	One-horse plow.
A. & A. Heilbron	Sacramento	Chilled plow.
A. & A. Heilbron	Sacramento	Plow for all purposes.
A. & A. Heilbron	Sacramento	Vineyard plow.
Stanton, Thomson & Co.	Sacramento	Gang plow.
Stanton, Thomson & Co.	Sacramento	Stubble plow.
Stanton, Thomson & Co.	Sacramento	Steel plow.
Stanton, Thomson & Co.	Sacramento	Sidehill plow.
Stanton, Thomson & Co.	Sacramento	One-horse plow.
Stanton, Thomson & Co.	Sacramento	Dynamometer.
Stanton, Thomson & Co.	Sacramento	Chilled plow.
Stanton, Thomson & Co.	Sacramento	Plow for all purposes.
Stanton, Thomson & Co.	Sacramento	Vineyard plow.
Benicia Agricultural W'ks.	Benicia	Gang plow.
Benicia Agricultural W'ks.	Benicia	Sulky plow.
Benicia Agricultural W'ks.	Benicia	Stubble plow.
Benicia Agricultural W'ks.	Benicia	Sod plow.
Benicia Agricultural W'ks.	Benicia	Steel plow.
Benicia Agricultural W'ks.	Benicia	Cast-iron plow.
Benicia Agricultural W'ks.	Benicia	Subsoil plow.
Benicia Agricultural W'ks.	Benicia	Vineyard plow.
Benicia Agricultural W'ks.	Benicia	Sidehill plow.
Benicia Agricultural W'ks.	Benicia	One-horse plow.
Benicia Agricultural W'ks.	Benicia	Chilled plow, Gale patent.
Benicia Agricultural W'ks.	Benicia	Plow for all purposes.

SECOND DEPARTMENT—Continued.

CLASS VII--VEHICLES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Charles Ott.....	Sacramento.....	Business wagon.
A. & A. Heilbron.....	Sacramento.....	Farm wagon for general purposes.
A. & A. Heilbron.....	Sacramento.....	Pleasure cart.
Studebaker Bros.....	Sacramento.....	Closed family carriage.
Studebaker Bros.....	Sacramento.....	Open family carriage.
Studebaker Bros.....	Sacramento.....	Top buggy.
Studebaker Bros.....	Sacramento.....	Two-seated open wagon.
Studebaker Bros.....	Sacramento.....	Farm wagon for general purposes.
Studebaker Bros.....	Sacramento.....	Spring market wagon.
Studebaker Bros.....	Sacramento.....	Pleasure cart.
Studebaker Bros.....	Sacramento.....	Breaking cart.
Studebaker Bros.....	Sacramento.....	Ladies' phaeton.
Studebaker Bros.....	Sacramento.....	Business wagon.
Studebaker Bros.....	Sacramento.....	Carriage or wagon brake.
A. Meister.....	Sacramento.....	Open family carriage.
A. Meister.....	Sacramento.....	Top buggy.
A. Meister.....	Sacramento.....	Open buggy.
A. Meister.....	Sacramento.....	Two-seated open wagon.
A. Meister.....	Sacramento.....	Spring market wagon.
A. Meister.....	Sacramento.....	Pleasure cart.
A. Meister.....	Sacramento.....	Ladies' phaeton.
A. Meister.....	Sacramento.....	Business wagon.
William D. O'Kane.....	San Francisco.....	Track sulky.
William D. O'Kane.....	San Francisco.....	Pleasure cart.
Stanton, Thomson & Co.....	Sacramento.....	Two-seated open wagon.
Stanton, Thomson & Co.....	Sacramento.....	Farm wagon for general purposes.
J. R. Northrup.....	Galt, Sac'to Co.....	Open buggy.
Benicia Agricultural W'ks.....	Benicia.....	Two-seated open wagon.
Baker & Hamilton.....	Sacramento.....	Farm wagon for general purposes.
J. F. Hill.....	Sacramento.....	Open family carriage.
J. F. Hill.....	Sacramento.....	Top buggy.
J. F. Hill.....	Sacramento.....	Open buggy.
J. F. Hill.....	Sacramento.....	Ladies' phaeton.
J. F. Hill.....	Sacramento.....	Business wagon.
J. F. Hill.....	Sacramento.....	Wagon or carriage brake.
J. F. Hill.....	Sacramento.....	Display of carriage wheels, hubs, etc.
J. F. Hill.....	Sacramento.....	California-grown wood.
Benicia Agricultural W'ks.....	Benicia.....	Pleasure cart.
M. Miller.....	Sacramento.....	Closed family carriage.
Elijah Hickman.....	Red Bluff.....	Model wagon.

CLASS IX—MISCELLANEOUS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
W. B. Wilshire & Co.....	San Francisco.....	Warehouse trucks.
L. A. Jaunessé.....	San Francisco.....	Patent clothes pole.
H. D. White.....	Woodland.....	Sweep horse-power to attach to pump.
Childs & Denehy.....	Acampo.....	Sectional weed cutter.
Paré Bros.....	San Francisco.....	Wine and cider press.
Sonney Bros.....	Sacramento.....	Improved cylinder for thrashing machine.
A. & A. Heilbron.....	Sacramento.....	Most meritorious exhibit in this department.
A. & A. Heilbron.....	Sacramento.....	Wagon jack.
A. & A. Heilbron.....	Sacramento.....	Display of butcher supplies and tools.
A. & A. Heilbron.....	Sacramento.....	Single shovel plow.
A. & A. Heilbron.....	Sacramento.....	Vineyard harrow.
A. & A. Heilbron.....	Sacramento.....	Hose reel and hose.
D. Lubin.....	Sacramento.....	Five pulverizing clod crushers and levelers, California invention.
R. F. Derrick.....	Galt.....	Variable nozzle.
C. A. Maydwell.....	Sacramento.....	Improved light feed lubricator.
A. & A. Heilbron.....	Sacramento.....	Vineyard and orchard cultivator and weed cutter combined.

SECOND DEPARTMENT.—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
G. W. Topping	Sacramento	Working model of locomotive No. 155.
Huntington, Hopkins & Co.	Sacramento	Corrugated iron.
Huntington, Hopkins & Co.	Sacramento	General blacksmith supplies.
Benicia Agricultural W'ks	Benicia	Store truck.
Benicia Agricultural W'ks	Benicia	Garden barrow.
Benicia Agricultural W'ks	Benicia	Grain cradle.
Benicia Agricultural W'ks	Benicia	Hose reel.
Benicia Agricultural W'ks	Benicia	Traction engine.
G. G. Wickson & Co.	San Francisco	Power butter worker.
G. G. Wickson & Co.	San Francisco	De Laval cream separator.
G. G. Wickson & Co.	San Francisco	Stoddard creamery.
G. G. Wickson & Co.	San Francisco	Tread horse-power.
G. G. Wickson & Co.	San Francisco	Horse-power thrasher.
G. G. Wickson & Co.	San Francisco	Set of farm tools.
G. G. Wickson & Co.	San Francisco	Dog power.
G. G. Wickson & Co.	San Francisco	Butter salting scales.
G. G. Wickson & Co.	San Francisco	Patent milk pail.
G. G. Wickson & Co.	San Francisco	Pyramid milk strainer.
G. G. Wickson & Co.	San Francisco	Calf feeders.
G. G. Wickson & Co.	San Francisco	Calf weaners.
G. G. Wickson & Co.	San Francisco	Milk testers.
G. G. Wickson & Co.	San Francisco	Display of dairy machinery.
Wm. Zartman	Petaluma	Road machine.
Stanton, Thomson & Co.	Sacramento	Chilled gang-plow bottom.
Stanton, Thomson & Co.	Sacramento	Steel gang-plow bottom.
J. H. Bowden	Colusa	Coleman's patent double harness.
G. G. Wickson & Co.	San Francisco	Merrill's tree protector.
California Fence Company	San Francisco	Indestructible fire-escape.
Daniel Best	San Leandro	Grain cleaning attachment for combined header and thrasher.

GOLD MEDAL ENTRIES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
A. & A. Heilbron	Sacramento	Agricultural machinery, and farming implements, vehicles, etc.
S. C. H. Agricultural Works.	Stockton	Agricultural machines, combined header and thrasher, grain cleaners, hay press, etc.
Benicia Agricultural W'ks.	Benicia	Agricultural machinery, vehicles, plows, and farming implements.
J. F. Hill	Sacramento	Vehicles, Cal. wood, wheels, hubs, etc.
Paré Bros.	San Francisco	Wine and cider press.
A. Meister	Sacramento	Vehicles.

THIRD DEPARTMENT.

CLASS I.—TEXTILE FABRICS AND MATERIALS FROM WHICH THEY ARE MADE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Carlson & Currier	San Francisco	Display of silk hosiery, American manufacture.
Mrs. A. Schirmer	Sacramento	Display of fancy goods.
Mrs. M. H. Ober	San Francisco	Exhibition of shoulder braces and corsets.
Zeimer Bros.	Sacramento	Display of fancy goods.

TRANSACTIONS OF THE
THIRD DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. Geo. Taylor.....	Sacramento.....	Exhibition of shoulder braces embroidered.
D. H. Quinn.....	Sacramento.....	Silk hat.
D. H. Quinn.....	Sacramento.....	Soft hat.
McKim & Orth.....	Sacramento.....	Display of fancy goods.
Mrs. N. B. Vivian.....	Sacramento.....	Knit mohair shawl.
Weinstock & Lubin.....	Sacramento.....	Silk hat.
Weinstock & Lubin.....	Sacramento.....	Soft hat.
Weinstock & Lubin.....	Sacramento.....	Gentlemen's shirts.
Weinstock & Lubin.....	Sacramento.....	Display of dry goods.
Weinstock & Lubin.....	Sacramento.....	Display of fancy goods.
California Cotton Mills Co.	East Oakland.....	Ten yards cloth of flax cotton.

CLASS II—NEEDLE, SHELL, AND WAXWORK.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. A. Schirmer.....	Sacramento.....	Display of children's clothing, Cal. made.
Mrs. A. Schirmer.....	Sacramento.....	Embroidered children's clothes.
Mrs. A. Schirmer.....	Sacramento.....	Silk embroidery on flannel.
Mrs. A. Schirmer.....	Sacramento.....	Display of linen embroidery.
Mrs. A. Schirmer.....	Sacramento.....	Fine lace work, hand made.
Mrs. A. Schirmer.....	Sacramento.....	Child's carriage afghan.
Mrs. A. Schirmer.....	Sacramento.....	Carriage afghan.
Mrs. A. Schirmer.....	Sacramento.....	One silk patchwork quilt.
Mrs. A. Schirmer.....	Sacramento.....	One ladies' dress.
Mrs. A. Schirmer.....	Sacramento.....	One embroidered ladies' dress.
Mrs. A. Schirmer.....	Sacramento.....	Display of hand knit underwear.
Mrs. A. Schirmer.....	Sacramento.....	Display of Spanish drawn work.
Mrs. A. Schirmer.....	Sacramento.....	Display of fancy articles.
Mrs. Thos. Hague.....	Sacramento.....	Patchwork quilt.
Flora C. Kendall.....	Oakland.....	Porcelain painting.
Miss Sarah Cohen.....	Sacramento.....	Embroidered toilet set (three pieces).
Mrs. A. Schirmer.....	Sacramento.....	Outline embroidery.
Misses Brothers.....	Sacramento.....	Display of millinery.
Misses Brothers.....	Sacramento.....	Velvet bonnet.
Misses Brothers.....	Sacramento.....	Velvet hat.
Misses Brothers.....	Sacramento.....	Silk bonnet.
Misses Brothers.....	Sacramento.....	Display of feathers.
Misses Brothers.....	Sacramento.....	Variety of artificial flowers.
Mrs. J. Storch.....	Sacramento.....	Embroidered chair seat and back.
Mrs. J. Storch.....	Sacramento.....	Embroidered toilet set (four pieces).
Mrs. J. Storch.....	Sacramento.....	Embroidered bedspread.
Mrs. J. Storch.....	Sacramento.....	Embroidered sofa pillow.
Mrs. E. McKindley.....	Florin.....	Two patchwork quilts.
Mrs. T. G. Clark.....	Sacramento.....	Two knit quilts and pair pillow shams.
Mrs. J. Storch.....	Sacramento.....	One embroidered wall banner.
Mrs. J. Storch.....	Sacramento.....	One embroidered lambrequin.
Mrs. J. Storch.....	Sacramento.....	One embroidered perfume cushion.
Mrs. J. Storch.....	Sacramento.....	Silk embroidery (flannel skirt).
Mrs. J. Storch.....	Sacramento.....	One pair linen embroidered pillow shams.
Ida M. Isaacs.....	Sacramento.....	Embroidered table cover (four corners).
Ida M. Isaacs.....	Sacramento.....	Embroidered handkerchief.
Mrs. Wm. Hoesch.....	San Francisco.....	Display of Spanish drawn work.
E. C. Jordan.....	Sacramento.....	Patchwork quilt.
Miss Minnie Heisen.....	Sacramento.....	Embroidered table scarf (two ends).
Miss Minnie Heisen.....	Sacramento.....	Embroidered fire screen.
Miss Minnie Heisen.....	Sacramento.....	Embroidered arraseno (two ties).
Miss Minnie Heisen.....	Sacramento.....	Plain silk ribbon work (broom case).
Mrs. N. Wilcox.....	Sacramento.....	Patchwork quilt (silk).
Mrs. A. Gotthold.....	Sacramento.....	Display of shell work (two pieces framed in shell).
Miss Winifred Kaseberg.....	Sacramento.....	Embroidered fire screen.
Mrs. N. Wilcox.....	Sacramento.....	Embroidered bedspread.
Mrs. Rosa Toller.....	Sacramento.....	Patchwork quilt.
Miss Minnie Heisen.....	Sacramento.....	Crochet shawl and tidy.

THIRD DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. Leland Howe.....	Sacramento.....	Embroidered table cover (four corners).
Miss Mary Pringle.....	Sacramento.....	Embroidered table cover (four corners).
Miss Mary Pringle.....	Sacramento.....	Embroidered table cover (four corners).
Miss Mary Pringle.....	Sacramento.....	Embroidered table scarf (two ends).
Miss Mary Pringle.....	Sacramento.....	Embroidered table scarf (two ends).
Miss Mary Pringle.....	Sacramento.....	Embroidered sofa pillow.
Miss Mary Pringle.....	Sacramento.....	Embroidered wall panel or banner.
Miss Mary Pringle.....	Sacramento.....	Embroidered wall panel or banner.
Miss Mary Pringle.....	Sacramento.....	Silk embroidery on flannel.
Miss Mary Pringle.....	Sacramento.....	Embroidered chenille.
Miss Mary Pringle.....	Sacramento.....	Embroidered chenille.
Miss Mary Pringle.....	Sacramento.....	Linen embroidery.
Miss Mary Pringle.....	Sacramento.....	Turkish embroidery.
Miss Mary Pringle.....	Sacramento.....	Turkish embroidery.
Miss Mary Pringle.....	Sacramento.....	Kensington embroidery.
Miss Mary Pringle.....	Sacramento.....	Kensington embroidery.
Miss Mary Pringle.....	Sacramento.....	Embroidered toilet set.
Miss Mary Pringle.....	Sacramento.....	Embroidered toilet set.
Miss Mary Pringle.....	Sacramento.....	Embroidered toilet set.
Miss Mary Pringle.....	Sacramento.....	Embroidered toilet set.
Miss Mary Pringle.....	Sacramento.....	Embroidered toilet set.
Miss Mary Pringle.....	Sacramento.....	Embroidered arraseno.
Miss Mary Pringle.....	Sacramento.....	Applique work.
Miss Mary Pringle.....	Sacramento.....	Applique work.
Miss Mary Pringle.....	Sacramento.....	Applique work.
Miss Mary Pringle.....	Sacramento.....	Applique work.
Miss Mary Pringle.....	Sacramento.....	Plain silk ribbon work.
Miss Mary Pringle.....	Sacramento.....	Plain silk ribbon work.
Miss Mary Pringle.....	Sacramento.....	Plain silk ribbon work.
Miss Mary Pringle.....	Sacramento.....	Plain silk ribbon work.
Miss Mary Pringle.....	Sacramento.....	Plain silk ribbon work.
Miss Mary Pringle.....	Sacramento.....	Hammered brass.
Miss Mary Pringle.....	Sacramento.....	Hammered brass.
Miss Mary Pringle.....	Sacramento.....	Hammered brass.
Miss Mary Pringle.....	Sacramento.....	Hammered brass.
Miss Mary Pringle.....	Sacramento.....	Hammered brass.
Miss Mary Pringle.....	Sacramento.....	Hammered brass.
Miss Mary Pringle.....	Sacramento.....	Display of mosses or lichens.
Miss Mary Pringle.....	Sacramento.....	Display of mosses or lichens.
Miss Mary Pringle.....	Sacramento.....	Handsomest, best, and largest display of fancy articles made by any lady or miss.
Miss Mary Pringle.....	Sacramento.....	Spanish drawn work.
Miss Mary Pringle.....	Sacramento.....	Spanish drawn work.
Miss Mary Pringle.....	Sacramento.....	Spanish drawn work.
Miss Mary Pringle.....	Sacramento.....	Spanish drawn work.
Miss Mary Pringle.....	Sacramento.....	Plush ribbon work.
Miss Mary Pringle.....	Sacramento.....	Plush ribbon work.
Rose White.....	Sacramento.....	Two embroidered table scarfs (two ends).
Rose White.....	Sacramento.....	One sofa pillow and back.
Mrs. C. E. Crocker.....	Sacramento.....	Embroidered arraseno chair.
Mrs. C. E. Crocker.....	Sacramento.....	Sofa pillow.
Miss Mary Jones.....	Sacramento.....	Display of Spanish drawn work.
Mrs. N. B. Vivian.....	Sacramento.....	Patchwork quilt.
Mrs. N. B. Vivian.....	Sacramento.....	Display of moss or lichens.
Mrs. N. B. Vivian.....	Sacramento.....	Applique work.
Mrs. N. B. Vivian.....	Sacramento.....	Ornamental grasses.
Miss Lillie Blue.....	Sacramento.....	Handsomest, best, and largest display of fancy articles made by any lady or miss.
Miss Lillie Blue.....	Sacramento.....	Display of decorative painting on plush, silk, bolting cloth, etc.
Miss Lillie Blue.....	Sacramento.....	Best and handsomest made dress for lady.
Miss Lillie Blue.....	Sacramento.....	Kensington painting (banner).
Miss Lillie Blue.....	Sacramento.....	Surface painting (plush portiere).
Miss Lillie Blue.....	Sacramento.....	Surface painting (lambrequin).
Miss Lillie Blue.....	Sacramento.....	Embroidered ottoman cover.
Miss Lillie Blue.....	Sacramento.....	Outline embroidery (pine pillow).
Mrs. C. A. Young.....	Sacramento.....	Embroidered sofa pillow.
Mrs. C. A. Young.....	Sacramento.....	Embroidered outline.
Mrs. C. A. Young.....	Sacramento.....	Fine lace work, hand made.
Mrs. C. A. Young.....	Sacramento.....	Crochet shawl.

THIRD DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. C. A. Young.....	Sacramento.....	Child's afghan.
Mrs. C. A. Young.....	Sacramento.....	Carriage afghan.
Mrs. C. A. Young.....	Sacramento.....	Wax flowers.
Phebe C. Brown.....	Sacramento.....	Embroidered ladies' dress (Spanish).
Phebe C. Brown.....	Sacramento.....	Embroidered table scarf (two ends).
Phebe C. Brown.....	Sacramento.....	Embroidered wall banner (Kensington).
Phebe C. Brown.....	Sacramento.....	Three embroidered handkerchiefs (Spanish).
Phebe C. Brown.....	Sacramento.....	Embroidered toilet set (Spanish).
Phebe C. Brown.....	Sacramento.....	Fine lace work, hand made.
Phebe C. Brown.....	Sacramento.....	Crochet shawl.
Phebe C. Brown.....	Sacramento.....	Kensington painting (three pieces).
Phebe C. Brown.....	Sacramento.....	Embroidered bedspread.
Phebe C. Brown.....	Sacramento.....	Darned net (not less than three pieces).
D. H. Emmons.....	Sacramento.....	Chenille embroidered apron (black satin).
D. H. Emmons.....	Sacramento.....	Embroidered bedspread.
Zeimer Bros.....	Sacramento.....	Display of children's clothing, California made.
Zeimer Bros.....	Sacramento.....	Fine lace work, hand made.
Mrs. H. A. Mayhew.....	Sacramento.....	Embroidered sofa pillow.
Miss Alice Felter.....	Sacramento.....	Embroidered toilet set (four pieces).
Miss Alice Felter.....	Sacramento.....	Carriage afghan.
Miss Alice Felter.....	Sacramento.....	Embroidered sofa cushion.
Miss Alice Felter.....	Sacramento.....	Embroidered table scarf (two ends).
Miss Alice Felter.....	Sacramento.....	Outline embroidery.
Miss Alice Felter.....	Sacramento.....	Outline embroidery.
Miss Alice Felter.....	Sacramento.....	Outline embroidery.
Miss Alice Felter.....	Sacramento.....	Outline embroidery.
Miss Alice Felter.....	Sacramento.....	Outline embroidery.
Miss Alice Felter.....	Sacramento.....	Outline embroidery.
Miss Alice Felter.....	Sacramento.....	Applique work.
Miss Alice Felter.....	Sacramento.....	Painting on bolting cloth.
Mrs. S. E. Stevens.....	Sacramento.....	Outline embroidery.
Mrs. S. E. Stevens.....	Sacramento.....	Fine lace work (hand made).
Mrs. George Muddox.....	Sacramento.....	Crochet quilt.
Mrs. E. W. Parker.....	Sacramento.....	Darned net (not less than three pieces).
Mrs. C. E. Crocker.....	Sacramento.....	One embroidered outline-tidy.
Julius Weyand.....	Colusa.....	Crochet shawl (mohair).
Mrs. George Taylor.....	Sacramento.....	Embroidered chair seat.
Mrs. George Taylor.....	Sacramento.....	Silk embroidery on flannel.
Mrs. George Taylor.....	Sacramento.....	Embroidery in chenille.
Mrs. George Taylor.....	Sacramento.....	Embroidery, table scarf in arraseno (two ends).
Mrs. George Taylor.....	Sacramento.....	Patchwork quilt (silk).
Miss Green.....	Sacramento.....	Embroidered sofa pillow.
Miss May Quinn.....	Sacramento.....	Embroidered chenille in gilt frame.
Miss Alice Felter.....	Sacramento.....	Embroidered fire screen.
Mrs. Dana Perkins.....	Rocklin.....	Embroidery, outline.
Mrs. Dana Perkins.....	Rocklin.....	Child's afghan.
Mrs. P. S. Lawson.....	Sacramento.....	Applique work.
White Sewing Machine Co.....	San Francisco.....	Embroidered table scarf (two ends).
White Sewing Machine Co.....	San Francisco.....	Embroidered fire screen.
White Sewing Machine Co.....	San Francisco.....	Embroidered wall panel or banner.
White Sewing Machine Co.....	San Francisco.....	Embroidered chenille (two pieces).
White Sewing Machine Co.....	San Francisco.....	Embroidered arraseno.
White Sewing Machine Co.....	San Francisco.....	Child's afghan.
White Sewing Machine Co.....	San Francisco.....	Lambrequin.
White Sewing Machine Co.....	San Francisco.....	Best and largest display of fancy articles made by any lady or miss.
Mrs. P. S. Lawson.....	Sacramento.....	Embroidery, outline.
Miss Mary Jones.....	Sacramento.....	Display of Spanish drawn work.
Mrs. J. J. Paulsell.....	Sacramento.....	Braiding by hand.
Mrs. George Taylor.....	Sacramento.....	Ornamental grasses.
McKim & Orth.....	Sacramento.....	Embroidered handkerchief.
McKim & Orth.....	Sacramento.....	Fine lace work (hand made).
McKim & Orth.....	Sacramento.....	Crochet shawl.
Mrs. N. B. Vivian.....	Sacramento.....	Display of shell work.
Mrs. Dr. Cluness.....	Sacramento.....	Embroidered bedspread.
Mrs. P. S. Lawson.....	Sacramento.....	Embroidered arraseno.

THIRD DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. P. S. Lawson	Sacramento	Embroidered sofa pillow.
Mrs. Mattie M. Fewel	Sacramento	Embroidered arraseno (two banners).
Mrs. Mattie M. Fewel	Sacramento	Embroidered arraseno (one plaque).
Mrs. Mattie M. Fewel	Sacramento	Plain silk ribbon work (one pincushion).
Mrs. Mattie M. Fewel	Sacramento	Embroidery in Kensington (one pincushion).
Mrs. Mattie M. Fewel	Sacramento	Embroidered arraseno (in large gilt frame).
Mrs. Mattie M. Fewel	Sacramento	Embroidered wall panel (tinsel work).
Mrs. M. H. Ober	San Francisco	Fine lace work (hand made).
Mrs. Addie Carter	Sacramento	Skeleton leaves.
Mrs. Addie Carter	Sacramento	Wax flowers.
Lizzie Fritsch	Sacramento	Spanish drawn work.
Mrs. Rosa Toller	Sacramento	Patchwork quilt.
Mrs. George Taylor	Sacramento	Embroidered handkerchief.
Mrs. George Taylor	Sacramento	Embroidery Kensington, on crape.
Mrs. George Taylor	Sacramento	Handsomest, best, and largest display of fancy articles, made by any lady or miss (hand embroidery).
Miss Emma Clausen	Blacks, Yolo Co.	Fine lace work (hand made).
S. M. Grimes	Sacramento	Specimen of wood carving (ship).
J. L. Siller	Sacramento	Specimen of wood carving (one picture frame and one work box).
Mrs. N. B. Vivian	Sacramento	Handsomest, best, and largest display of fancy articles made by any lady or miss.

JUVENILE DEPARTMENT.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Florine Prentice, age 13	San Francisco	Crochet work.
Edwin C. Clark, age 11	Sacramento	One knit pillow sham and one knit pincushion cover.
Maud E. Guthrie, age 10	Sacramento	Crochet afghan.
Elsie Kelly, age 12	Sacramento	Silk quilt.
Agnes M. Hopper, age 10	Sacramento	Calico dress by a miss under 18 years.

CLASS III—PRINTING, LITHOGRAPHING, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Van Horn, Mather & Frost.	San Francisco	Collection of maps, globes, etc., Yaggy's anatomical study.

GOLD MEDAL ENTRIES.

For the most Meritorious Exhibition in this Department, the Society's Gold Medal.

EXHIBITOR.	P. O. Address.	Class.	Articles Exhibited.
Mrs. M. H. Ober	San Francisco	1	Shoulder braces and corsets.
Mrs. George Taylor	Sacramento	2	Hand embroidery.
Mrs. A. Schirmer	Sacramento	2	Ladies' and children's underwear and fancy goods.

FOURTH DEPARTMENT.

CLASS I—MANUFACTURES OF LEATHER, PAPER, AND RUBBER.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Leak Glove Mfg Co.	San Francisco	Display of leather.
Leak Glove Mfg Co.	San Francisco	Display of leather gloves and mittens.
William D. O'Kane	San Francisco	Set of single harness.
R. W. Neely, Jr.	Sacramento	Pair of dress boots.
R. W. Neely, Jr.	Sacramento	Pair of heavy boots.
R. W. Neely, Jr.	Sacramento	Pair of gentlemen's dress shoes.
R. W. Neely, Jr.	Sacramento	Pair of Congress gaiters.
K. W. Neely, Jr.	Sacramento	Pair of bootees.
R. W. Neely, Jr.	Sacramento	Display of men's and boys' boots and shoes, gaiters, etc.
J. G. Davis	Sacramento	Exhibition of carpets and rugs.
Van Voorhies & Co.	Sacramento	Saddletrees.
Kullman & Wagner	Stockton	Display of leather.
California Cotton Mills Co.	East Oakland	Display of cordage (cotton).

CLASS II—WORKED METALS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
W. B. Wilshire & Co.	San Francisco	Burglar and fire-proof safe.
Holbrook, Merrill & Stetson	Sacramento	Display of copper work.
Holbrook, Merrill & Stetson	Sacramento	Display of brass work.
Holbrook, Merrill & Stetson	Sacramento	Display of tinware.
Holbrook, Merrill & Stetson	Sacramento	Display of kitchen utensils of tin.
Holbrook, Merrill & Stetson	Sacramento	Exhibition of lead pipe.
Holbrook, Merrill & Stetson	Sacramento	Display of wire goods.
Holbrook, Merrill & Stetson	Sacramento	Milk cans.
Conrad Zwickel	Sacramento	Iron fencing, including post.
Huntington, Hopkins & Co.	Sacramento	Display of copper work.
Huntington, Hopkins & Co.	Sacramento	Display of brass work.
Huntington, Hopkins & Co.	Sacramento	Display of modern building hardware.
Huntington, Hopkins & Co.	Sacramento	Display of general hardware.
Huntington, Hopkins & Co.	Sacramento	Display of iron and steel.
Huntington, Hopkins & Co.	Sacramento	Display of mechanics' tools.
Huntington, Hopkins & Co.	Sacramento	Display of pocket cutlery.
Huntington, Hopkins & Co.	Sacramento	Display of circular saws.
Huntington, Hopkins & Co.	Sacramento	Display of files.
Huntington, Hopkins & Co.	Sacramento	Pruning shears.
Huntington, Hopkins & Co.	Sacramento	Pruning knives.
Huntington, Hopkins & Co.	Sacramento	Display of wire goods.

CLASS III—STOVES, CASTINGS, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Holbrook, Merrill & Stetson	Sacramento	Cooking stove for wood.
Holbrook, Merrill & Stetson	Sacramento	Cooking stove for coal.
Holbrook, Merrill & Stetson	Sacramento	Parlor stove.
Holbrook, Merrill & Stetson	Sacramento	Oil stove.
Holbrook, Merrill & Stetson	Sacramento	Cooking range.
Holbrook, Merrill & Stetson	Sacramento	Specimen of marbled iron.
Holbrook, Merrill & Stetson	Sacramento	Display of iron hollowware.
Holbrook, Merrill & Stetson	Sacramento	Farmers' caldrons.
Holbrook, Merrill & Stetson	Sacramento	Portable range.
Holbrook, Merrill & Stetson	Sacramento	Laundry stove.
Holbrook, Merrill & Stetson	Sacramento	Assortment of japanned ware.
John F. Myers	San Francisco	Oil and gasoline stoves.

FOURTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
L. L. Lewis & Co.	Sacramento.	Cooking stove for wood.
L. L. Lewis & Co.	Sacramento.	Cooking stove for coal.
L. L. Lewis & Co.	Sacramento.	Parlor stove.
L. L. Lewis & Co.	Sacramento.	Warming furnace.
L. L. Lewis & Co.	Sacramento.	Cooking range.
L. L. Lewis & Co.	Sacramento.	Specimen of marbled stone.
L. L. Lewis & Co.	Sacramento.	Portable range.

CLASS IV—MUSICAL INSTRUMENTS—CALIFORNIA MANUFACTURE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
J. E. Genung	Sacramento.	Organ (pipe).
M. L. Hammer	Sacramento.	General display of musical instruments.
M. L. Hammer	Sacramento.	Assortment of reed and stringed instruments.
M. L. Hammer	Sacramento.	Stringed or reed instruments made in California.
John F. Cooper	Sacramento.	General display of musical instruments.
John F. Cooper	Sacramento.	Assortment of brass and silver wind instruments.
John F. Cooper	Sacramento.	Assortment of reed and stringed instruments.
John F. Cooper	Sacramento.	Stringed instruments made in California: One violin, two banjos, one guitar.
John F. Cooper	Sacramento.	Upright piano made in California.

CLASS V—FURNITURE—CALIFORNIA MANUFACTURE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Pac. Spring and Mattress Co.	San Francisco.	Sofa.
Pac. Spring and Mattress Co.	San Francisco.	Lounge.
Pac. Spring and Mattress Co.	San Francisco.	Hair mattress.
Pac. Spring and Mattress Co.	San Francisco.	Wool mattress.
Pac. Spring and Mattress Co.	San Francisco.	Writing desk.
Pac. Spring and Mattress Co.	San Francisco.	Spring mattress.
Pac. Spring and Mattress Co.	San Francisco.	Display of iron furniture.
B. F. Farrar	San Francisco.	One set parlor furniture.
B. F. Farrar	San Francisco.	Four hair mattresses (section).
B. F. Farrar	San Francisco.	Two spring mattresses.
B. F. Farrar	San Francisco.	Two lounges.
Capital Furniture Co.	Sacramento.	Dressing bureau.
Capital Furniture Co.	Sacramento.	Sofa.
Capital Furniture Co.	Sacramento.	Center table.
Capital Furniture Co.	Sacramento.	School furniture.
Capital Furniture Co.	Sacramento.	Bookcase.
Capital Furniture Co.	Sacramento.	Display of furniture (California make).
Capital Furniture Co.	Sacramento.	Set of bedroom furniture.
J. G. Davis	Sacramento.	Dressing bureau.
J. G. Davis	Sacramento.	Extension table.
J. G. Davis	Sacramento.	Center table.
J. G. Davis	Sacramento.	Display of furniture.
J. G. Davis	Sacramento.	Hair mattress.
J. G. Davis	Sacramento.	Sick chair or couch.
J. G. Davis	Sacramento.	Spring mattress.
J. G. Davis	Sacramento.	Bedroom set.
Truman S. Clark & Son.	San Francisco.	Dressing bureau.
Truman S. Clark & Son.	San Francisco.	Writing desk.
Truman S. Clark & Son.	San Francisco.	Bookcase.
Truman S. Clark & Son.	San Francisco.	Spring mattress.
Truman S. Clark & Son.	San Francisco.	Display of iron furniture.
C. M. Campbell	Sacramento.	Set of bedroom furniture.

TRANSACTIONS OF THE
FOURTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
C. M. Campbell	Sacramento	Dressing bureau.
W. D. Comstock	Sacramento	Set of parlor furniture.
W. D. Comstock	Sacramento	Parlor chairs.
W. D. Comstock	Sacramento	Display of furniture.
W. D. Comstock	Sacramento	Hair mattress.
W. D. Comstock	Sacramento	Spring mattress.
W. D. Comstock	Sacramento	Display of upholstery.
John Breuner	Sacramento	Dressing bureau.
John Breuner	Sacramento	Sofa.
John Breuner	Sacramento	Lounge.
John Breuner	Sacramento	Extension table.
John Breuner	Sacramento	Office chair.
John Breuner	Sacramento	Set of parlor chairs.
John Breuner	Sacramento	Center table.
John Breuner	Sacramento	Set of parlor furniture.
John Breuner	Sacramento	Pair of side tables.
John Breuner	Sacramento	Display of furniture.
John Breuner	Sacramento	Hair mattress.
John Breuner	Sacramento	Writing desk.
John Breuner	Sacramento	Bookcase.
John Breuner	Sacramento	Wardrobe.
John Breuner	Sacramento	Sick chair.
John Breuner	Sacramento	Spring mattress.
John Breuner	Sacramento	Set of bedroom furniture.
John Breuner	Sacramento	Display of upholstery.
John Breuner	Sacramento	Office desk.
John Breuner	Sacramento	Display of willow furniture.
Jacob Strable & Co.	San Francisco	Billiard table.
Capital Furniture Co.	Sacramento	Wardrobe.
Humboldt County Exhibit.	Eureka	Display of California woods.

CLASS VI—WOODENWARE—CALIFORNIA MANUFACTURE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
A. S. Hopkins & Bro.	Sacramento	Display of cedarware.
A. S. Hopkins & Bro.	Sacramento	Display of pineware.
A. S. Hopkins & Bro.	Sacramento	Display of oakware.
A. S. Hopkins & Bro.	Sacramento	Display of willowware.
A. S. Hopkins & Bro.	Sacramento	Display of split wood baskets.
A. S. Hopkins & Bro.	Sacramento	Display of osier.
A. S. Hopkins & Bro.	Sacramento	Display of woodenware.
A. S. Hopkins & Bro.	Sacramento	Exhibition of broomcorn, brooms, and brushes.
A. S. Hopkins & Bro.	Sacramento	Assortment of cooper's ware.
Theodore W. Schwamb	Sacramento	Gilt frames.
Theodore W. Schwamb	Sacramento	Twist moldings.
Theodore W. Schwamb	Sacramento	Fancy moldings.
Mrs. C. A. Young	Sacramento	Display of fancy moldings and scroll sawing.

CLASS VII—ELECTRICAL APPLIANCES, ETC.—AMERICAN MANUFACTURE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
IXL Elastic Truss Co.	San Francisco	Truss, IXL.
Huntington, Hopkins & Co.	Sacramento	Double-barrel shotgun.
Huntington, Hopkins & Co.	Sacramento	Sporting rifle.
Huntington, Hopkins & Co.	Sacramento	Breech-loading shotgun.
Pacific Optical Institute ..	Sacramento	Assortment of spectacles and eye-glasses, showing different styles and shapes of frames and nose-pieces.

FOURTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Pacific Optical Institute	Sacramento	Assortment of all kinds of finished convex, concave, cylindrical, and plain lenses.
Pacific Optical Institute	Sacramento	Assortment of all kinds of unfinished convex, concave, cylindrical, and plain lenses.

CLASS VIII—CHEMICALS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Daw Kerrel & Bayley	San Francisco	Display of blacking.
Capital Soap Co.	Sacramento	Display of soap.
Capital Soap Co.	Sacramento	Bleaching soap.
Capital Soap Co.	Sacramento	Toilet soap.
Capital Soap Co.	Sacramento	Castile soap.
Weber & Co.	Sacramento	Yeast powder.
John M. Conner	San Francisco	Stove polish.
A. S. Hopkins & Bro.	Sacramento	Display of writing fluid.
A. S. Hopkins & Bro.	Sacramento	Display of blacking.
A. S. Hopkins & Bro.	Sacramento	Stove polish.
A. S. Hopkins & Bro.	Sacramento	Axle grease.
Mrs. H. Works & Co.	Oakland	Hair restorer (to be tested).

CLASS IX—STONEWARE, BRICK, TILES, ETC.—AMERICAN MANUFACTURE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
George Muddox	Sacramento	Water pipe and water lime.
George Muddox	Sacramento	Sample of drain tile.
George Muddox	Sacramento	Roofing tile.
George Muddox	Sacramento	Flooring.
George Muddox	Sacramento	Terra cotta.
George Muddox	Sacramento	Firebricks.
George Muddox	Sacramento	Pottery, various kinds.
George Muddox	Sacramento	Display of stoneware.
Whittier, Fuller & Co.	Sacramento	Sample of stained glass.
Whittier, Fuller & Co.	Sacramento	Sample of ground and cut glass.

CLASS X—MINERALS, FOSSILS, BIRDS, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Inyo Marble Company of California	Sacramento	Suit of useful minerals of California (marble).
Mrs. Z. P. Brandon	Latrobe	Suit of the animal kingdom, etc.
Mrs. Z. P. Brandon	Latrobe	Collection illustrating ornithology of California.

CLASS XI—MARBLE AND GRANITE WORK.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Inyo Marble Company of California	Sacramento	Collection of polished marble work.

FOURTH DEPARTMENT—Continued.

GOLD MEDAL ENTRIES.

For the Most Meritorious Exhibition in this Department, the Society's Gold Medal.

EXHIBITOR.	P. O. Address.	Class.	Articles Exhibited.
Capital Soap Company.....	Sacramento.....	8	Meritorious exhibit of soap.
J. E. Genung.....	Sacramento.....	4	Meritorious exhibit of pipe organ.
John Breuner.....	Sacramento.....	5	Meritorious exhibit of furniture.
Huntington, Hopkins & Co..	Sacramento.....	2 and 7	Meritorious exhibit of hardware.
Leak Glove Mfg Co.....	San Francisco.....	1	Meritorious exhibit of leather gloves and mittens.
Jacob Strable & Co.....	San Francisco.....	5	Meritorious exhibit of billiard tables.
Inyo Marble Co. of Cal.....	Sacramento.....	10 and 11	Meritorious exhibit of California marble.
John F. Cooper.....	Sacramento.....	4 and Miscellaneous	Meritorious exhibit of musical instruments of all classes

FIFTH DEPARTMENT.

CLASS I—SILK, COTTON, AND TOBACCO.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Carlson & Currier.....	San Francisco	Best display of weaving silk on the loom and samples of piece silk made in California.
Carlson & Currier.....	San Francisco	Best general display of silks made in California.
Carlson & Currier.....	San Francisco	Best display of thrown and twisted silk in the gum, and boiled off, made in California.
Carlson & Currier.....	San Francisco	Best display of machine spool silk made in California.
Carlson & Currier.....	San Francisco	Best display of knitting silk made in California.
Carlson & Currier.....	San Francisco	Best display of spool embroidery made in California.
Carlson & Currier.....	San Francisco	Best display of skein embroidery made in California.

CLASS II—FLOUR AND GRAIN.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Moses Wick.....	Wicks.....	Sample of proper wheat.
C. McCreary & Co.....	Sacramento.....	Sample of bakers' flour.
C. McCreary & Co.....	Sacramento.....	Whitest sample of family flour.
Mrs. R. S. Lockett.....	Perkins.....	Exhibit of garden seeds of California production.
Del Monte Milling Co.....	San Francisco.....	Sample of bakers' flour.
Del Monte Milling Co.....	San Francisco.....	Whitest sample of family flour.
B. N. Bugbey.....	Sacramento.....	Bushel yellow corn.
B. N. Bugbey.....	Sacramento.....	Proper wheat.

FIFTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
B. N. Bugbey	Sacramento	One sack barley.
E. F. Aiken	Sacramento	Bushel yellow corn.
John Reith	Union House	Royal Australian wheat.
A. W. Sperry & Co.	Stockton	Sample of bakers' flour.
A. W. Sperry & Co.	Stockton	Sample of family flour.
W. R. Strong & Co.	Sacramento	Exhibit
L. M. Boggs	Willows Ranch	of garden seeds, California production.
R. McEnispy	Chico	Half bushel yellow corn.
J. D. Huffman	Lodi	Sample of Australian wheat.
J. B. Welty	Sacramento	Display of grain in sheaf.

CLASS III—VEGETABLES, ROOTS, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Isaac Lea	Florin	Display of licorice root.
P. M. Artz	Perkins	Peck of tomatoes.
P. M. Artz	Perkins	Half peck pole beans.
Mrs. R. S. Lockett	Perkins	Twelve parsnips.
Mrs. R. S. Lockett	Perkins	Twelve carrots.
Mrs. R. S. Lockett	Perkins	Six long blood beets.
Mrs. R. S. Lockett	Perkins	Six turnip beets.
Mrs. R. S. Lockett	Perkins	Six sugar beets.
Mrs. R. S. Lockett	Perkins	Peck of tomatoes.
Mrs. R. S. Lockett	Perkins	Six drumhead cabbages.
Mrs. R. S. Lockett	Perkins	Six heads any other variety.
Mrs. R. S. Lockett	Perkins	Three heads cauliflower.
Mrs. R. S. Lockett	Perkins	Half peck of peppers for pickling.
Mrs. R. S. Lockett	Perkins	Twelve roots salsify.
Mrs. R. S. Lockett	Perkins	Six marrow squashes.
Mrs. R. S. Lockett	Perkins	Six hubbard squashes.
Mrs. R. S. Lockett	Perkins	Six crookneck squashes.
Geo. Muddox	Sacramento	Six cucumbers.
Mrs. R. S. Lockett	Perkins	Best and largest pumpkin.
Mrs. R. S. Lockett	Perkins	Three cantaloupes.
Mrs. R. S. Lockett	Perkins	Three muskmelons.
Mrs. R. S. Lockett	Perkins	Six cucumbers.
Mrs. R. S. Lockett	Perkins	Half peck lima beans in pod.
Mrs. R. S. Lockett	Perkins	Half peck pole beans other than lima.
Mrs. R. S. Lockett	Perkins	Half peck garden peas dried.
Mrs. R. S. Lockett	Perkins	Half peck gherkins.
J. H. Hamilton	Sacramento	Cucumbers.
J. H. Hamilton	Sacramento	Six hubbard squashes.
J. H. Hamilton	Sacramento	Six crookneck squashes.
B. N. Bugbey	Sacramento	Six turnip beets.
B. N. Bugbey	Sacramento	Half bushel sweet potatoes.
B. N. Bugbey	Sacramento	Half bushel white potatoes.
B. N. Bugbey	Sacramento	Twelve carrots.
B. N. Bugbey	Sacramento	One peck tomatoes.
B. N. Bugbey	Sacramento	One peck red onions.
B. N. Bugbey	Sacramento	One peck white onions.
B. N. Bugbey	Sacramento	Six marrow squashes.
B. N. Bugbey	Sacramento	Six hubbard squashes.
B. N. Bugbey	Sacramento	Largest pumpkin.
B. N. Bugbey	Sacramento	Three watermelons.
E. F. Aiken	Sacramento	Peck of tomatoes.
E. F. Aiken	Sacramento	Half peck of tomatoes for pickling.
E. F. Aiken	Sacramento	Six marrow squashes.
E. F. Aiken	Sacramento	Six crookneck squashes.
E. F. Aiken	Sacramento	Largest pumpkin.
E. F. Aiken	Sacramento	Three watermelons.
E. F. Aiken	Sacramento	Six cucumbers.
E. F. Aiken	Sacramento	Half peck lima beans in pod.
E. F. Aiken	Sacramento	Half peck pole beans in pod.
Felice Gabrielli	Perkins	Half bushel red potatoes.

FIFTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Felice Gabrielli	Perkins	Half bushel white potatoes.
Felice Gabrielli	Perkins	Half bushel early rose potatoes.
Felice Gabrielli	Perkins	Greatest variety Irish potatoes.
Felice Gabrielli	Perkins	Half bushel sweet potatoes.
Felice Gabrielli	Perkins	Twelve parsnips.
Felice Gabrielli	Perkins	Twelve carrots.
Felice Gabrielli	Perkins	Six long blood beets.
Felice Gabrielli	Perkins	Six turnip beets.
Felice Gabrielli	Perkins	Six sugar beets.
Felice Gabrielli	Perkins	Peck of tomatoes.
Felice Gabrielli	Perkins	Six drumhead cabbages.
Felice Gabrielli	Perkins	Six heads red Dutch cabbages.
Felice Gabrielli	Perkins	Six heads red cabbages.
Felice Gabrielli	Perkins	Three heads cauliflower.
Felice Gabrielli	Perkins	Three heads broccoli.
Felice Gabrielli	Perkins	Six heads lettuce.
Felice Gabrielli	Perkins	Half peck red onions.
Felice Gabrielli	Perkins	Half peck yellow onions.
Felice Gabrielli	Perkins	Half peck white onions.
Felice Gabrielli	Perkins	Half peck peppers for pickling.
Felice Gabrielli	Perkins	Twelve roots salsify.
Felice Gabrielli	Perkins	Six stalks celery.
Felice Gabrielli	Perkins	Six marrow squashes.
Felice Gabrielli	Perkins	Six hubbard squashes.
Felice Gabrielli	Perkins	Six crookneck squashes.
Felice Gabrielli	Perkins	Dozen sweet corn, green.
Felice Gabrielli	Perkins	Three watermelons.
Felice Gabrielli	Perkins	Three cantaloupes.
Felice Gabrielli	Perkins	Three muskmelons.
Felice Gabrielli	Perkins	Six cucumbers.
Felice Gabrielli	Perkins	Half peck lima beans, in pod.
Felice Gabrielli	Perkins	Half peck white beans, dry.
Felice Gabrielli	Perkins	Half peck kidney bush beans, in pod.
Felice Gabrielli	Perkins	Half peck pole beans, other than lima.
Felice Gabrielli	Perkins	Half peck field peas, dry.
Felice Gabrielli	Perkins	Half peck garden peas, dry.
Felice Gabrielli	Perkins	Half peck castor oil beans.
Felice Gabrielli	Perkins	Greatest variety of peas, dry.
Felice Gabrielli	Perkins	Half peck gherkin cucumbers.
Felice Gabrielli	Perkins	Three purple egg plants.
H. H. Wilson	Nicolaus	Six blood beets.
H. H. Wilson	Nicolaus	Six sugar beets.
H. H. Wilson	Nicolaus	Six turnip beets.
H. H. Wilson	Nicolaus	Six carrots.
L. M. Boggs	Willows Ranch	Half peck red onions.
L. M. Boggs	Willows Ranch	Greatest variety of Irish potatoes.
L. M. Boggs	Willows Ranch	Tomatoes.
Thomas McConnell	Elk Grove	Large pumpkin.
Thomas McConnell	Elk Grove	Six hubbard squashes.
Sam. C. Waters	Clements	Large pumpkin.

TABLES OF VEGETABLES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
E. F. Aiken	Sacramento	Table of vegetables exhibited by producer.
Felice Gabrielli	Perkins	Table of vegetables exhibited by one person.

FIFTH DEPARTMENT—Continued.

CLASS IV—FLOWERS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Bell Conservatory Co.	Sacramento. ....	..... Largest collection of flowering plants in bloom.
Bell Conservatory Co.	Sacramento. ....	..... Collection of ornamental foliage plants.
Bell Conservatory Co.	Sacramento. ....	..... Display of cut flowers.
Bell Conservatory Co.	Sacramento. ....	..... Collection of new and rare plants.
Bell Conservatory Co.	Sacramento. ....	..... Display of coleus, distinct varieties.
Bell Conservatory Co.	Sacramento. ....	..... Most varied exhibit of named varieties of dahlias.
Bell Conservatory Co.	Sacramento. ....	..... Collection of roses in bloom.
Bell Conservatory Co.	Sacramento. ....	..... Collection of fuchsias in bloom.
Bell Conservatory Co.	Sacramento. ....	..... Collection of tuberoses.
Bell Conservatory Co.	Sacramento. ....	..... Collection of pinks.
Bell Conservatory Co.	Sacramento. ....	..... Collection of ferns.
Bell Conservatory Co.	Sacramento. ....	..... Display of bouquets.
Bell Conservatory Co.	Sacramento. ....	..... Collection of plants suitable for greenhouse, conservatory, and window culture.
Bell Conservatory Co.	Sacramento. ....	..... Display of hanging baskets containing plants.

CLASS V—CHEESE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Ed. Arthur	Sacramento. ....	..... Cheese one year old and over.
Ed. Arthur	Sacramento. ....	..... Cheese under one year old.
Ed. Arthur	Sacramento. ....	..... Display of cheese.

CLASS VI—BUTTER.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
James Askew	El Dorado County .....	..... Tub of firkin butter.
John Hanlon	Walsh Station .....	..... Display of butter in rolls.
John Hanlon	Walsh Station .....	..... Tub of firkin butter.
Andrew Smith	Redwood City .....	..... Tub of firkin butter.
Andrew Smith	Redwood City .....	..... Display of butter in rolls.

CLASS VII—BREAD AND CEREAL FOOD.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. F. P. Lowell	Sacramento. ....	..... Biscuit.
Mrs. F. P. Lowell	Sacramento. ....	..... Soda biscuit.
Mrs. F. P. Lowell	Sacramento. ....	..... Domestic corn bread.
Mrs. F. P. Lowell	Sacramento. ....	..... Graham bread.
Lizzie B. Aiken	Sacramento. ....	..... Domestic bread.
Lizzie B. Aiken	Sacramento. ....	..... Biscuit.
Lizzie B. Aiken	Sacramento. ....	..... Soda biscuit.
Lizzie B. Aiken	Sacramento. ....	..... Domestic corn bread.
Lizzie B. Aiken	Sacramento. ....	..... Domestic rye bread.
Lizzie B. Aiken	Sacramento. ....	..... Domestic brown bread.
Lizzie B. Aiken	Sacramento. ....	..... Graham bread.
Lizzie B. Aiken	Sacramento. ....	..... Domestic wheat bread.
Lizzie B. Aiken	Sacramento. ....	..... Graham muffins.
Lizzie B. Aiken	Sacramento. ....	..... Cream biscuit.
Lizzie B. Aiken	Sacramento. ....	..... Corn meal muffins.
Lizzie B. Aiken	Sacramento. ....	..... Cream waffles.
Lizzie B. Aiken	Sacramento. ....	..... Muffins.

FIFTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Lizzie B. Aiken	Sacramento	Display of domestic bread.
Mrs. P. Martz	Sacramento	Soda biscuit.
Mrs. P. Martz	Sacramento	Domestic corn bread.
Mrs. P. Martz	Sacramento	Domestic rye bread.
Mrs. P. Martz	Sacramento	Domestic brown bread.
Mrs. P. Martz	Sacramento	Graham bread.
Mrs. P. Martz	Sacramento	Domestic wheat bread.
Mrs. J. Hillhouse	Sacramento	Domestic wheat bread.
Mrs. J. Hillhouse	Sacramento	Biscuit.
Mrs. J. Hillhouse	Sacramento	Brown bread.
Mrs. F. P. Lowell	Sacramento	Butter crackers.
Mrs. F. P. Lowell	Sacramento	Sweet crackers.
Mrs. F. P. Lowell	Sacramento	Boston crackers.
Miss S. Sullivan	Sacramento	Domestic corn bread.
Miss S. Sullivan	Sacramento	Domestic wheat bread.
Miss S. Sullivan	Sacramento	Biscuit.
M. E. Tryon	Sacramento	Domestic wheat bread.
M. E. Tryon	Sacramento	Domestic corn bread.
M. E. Tryon	Sacramento	Graham bread.
M. E. Tryon	Sacramento	Biscuit.
M. E. Tryon	Sacramento	Soda biscuit.
Miss Mary Schaller	Sacramento	Biscuit.
Miss Mary Schaller	Sacramento	Soda biscuit.
Miss Mary Schaller	Sacramento	Domestic corn bread.
Miss Mary Schaller	Sacramento	Domestic rye bread.
Miss Mary Schaller	Sacramento	Domestic brown bread.
Miss Mary Schaller	Sacramento	Domestic graham bread.
Miss Mary Schaller	Sacramento	Domestic wheat bread.
Miss Mary Schaller	Sacramento	Display of domestic bread.
W. H. Wright	Sacramento	Soda biscuit.
W. H. Wright	Sacramento	Domestic corn bread.
W. H. Wright	Sacramento	Domestic rye bread.
W. H. Wright	Sacramento	Domestic brown bread.
W. H. Wright	Sacramento	Graham bread.
W. H. Wright	Sacramento	Domestic wheat bread.
W. H. Wright	Sacramento	Display of domestic bread.

CLASS VIII—SUGAR, SYRUP, CANDY, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Sacramento	Display of sugar cane.
Barton & Bell	Sacramento	Display of confectionery.
Barton & Bell	Sacramento	General varieties of candies made in hall during exhibition.

GOLD MEDAL ENTRIES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
C. McCreary & Co.	Sacramento	Display of flour.
Bell Conservatory Co.	Sacramento	Display of flowers and flowering plants.

SIXTH DEPARTMENT.

CLASS I—APPLES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display and variety.
W. O. Jennings	Red Bluff	Display and variety.
W. J. Belcher	Cosumnes	Display and variety.
B. N. Bugbey	Sacramento	Display and variety.
Henry Starr	Sacramento	Display and variety.
John L. Stubbs	Sacramento	Display and variety.
L. M. Boggs	Willows Ranch	Display and variety.
Mrs. Jas. Lansing	Sacramento	Display and variety.
W. D. Carpenter	Diamond Springs	Display and variety.
Robert McKay	El Dorado County	Display and variety.

CLASS I—PEACHES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Charles Ott	Sacramento	Display and variety.
W. C. Smith	Florin	Display and variety.
Mrs. R. S. Lockett	Perkins	Display and variety.
Henry Starr	Sacramento	Display and variety.
B. N. Bugbey	Sacramento	Display and variety.
George T. Rich	Sacramento	Display and variety.
J. A. Robinson	Newcastle	Display and variety.
P. W. Butler	Penryn	Display and variety.
Mrs. Mary E. Fox	Newcastle	Display and variety.
J. B. Welty	Sacramento	Display and variety.
John L. Stubbs	Sacramento	Display and variety.
Neil McDevitt	Newcastle	Display and variety.
Mrs. James Lansing	Sacramento	Display and variety.
W. D. Carpenter	Diamond Springs	Display and variety.
George Perkins	Newcastle	Display and variety.

CLASS I—PLUMS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display and variety.
E. F. Aiken	Sacramento	Display and variety.
P. W. Butler	Penryn	Display and variety.
Mrs. Mary E. Fox	Newcastle	Display and variety.
L. M. Boggs	Willows Ranch	Display and variety.

CLASS I—PEARS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display and variety.
Henry Starr	Sacramento	Display and variety.
B. N. Bugbey	Sacramento	Display and variety.
J. B. Welty	Sacramento	Display and variety.
Jno. L. Stubbs	Sacramento	Display and variety.
Neil McDevitt	Newcastle	Display and variety.
Mrs. Jas. Lansing	Sacramento	Display and variety.
W. D. Carpenter	Diamond Springs	Display and variety.
Rob't McKay	El Dorado County	Display and variety.

TRANSACTIONS OF THE
SIXTH DEPARTMENT—Continued.
CLASS I—GREEN FIGS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display and variety.
Sam. C. Waters	Clements	Display and variety.
Mrs. Mary E. Fox	Newcastle	Display and variety.
Jno. L. Stubbs	Sacramento	Display and variety.
Jas. Rutter	Florin	Display and variety.
Mrs. Jas. Lansing	Sacramento	Display and variety.

CLASS I—TROPICAL FRUITS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Isaac Lea	Florin	Display of tropical fruits by producer.
Geo. T. Rich	Sacramento	Display of tropical fruits by producer.
Mrs. Mary E. Fox	Newcastle	Display of tropical fruits by producer.

CLASS I—ORANGES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Isaac Lea	Florin	Display and variety.
Geo. T. Rich	Sacramento	Display and variety.
H. E. Parker	Penryn	Display and variety.
Mrs. Wm. Karr	Marysville	Display and variety.

CLASS I—LEMONS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Isaac Lea	Florin	Display and variety.
Geo. T. Rich	Sacramento	Display and variety.
W. G. Murphy	Marysville	Display and variety.
Mrs. James Gray	Sacramento	Display and variety.

CLASS I—GENERAL DISPLAY.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display of fruit by producer.
P. W. Butler	Penryn	Display of fruit by producer.
Mrs. James Lansing	Sacramento	Display of fruit by producer.
W. D. Carpenter	Diamond Springs	Display of fruit by producer.

CLASS II—HONEY, PRESERVES, PICKLES, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display of fruit in glass by producer.
Mrs. R. S. Lockett	Perkins	Six jars raspberry jelly.
Mrs. R. S. Lockett	Perkins	Six jars red currant jelly.
Mrs. R. S. Lockett	Perkins	Six jars blackberry jelly.
Mrs. R. S. Lockett	Perkins	Six jars strawberry jelly.
Mrs. R. S. Lockett	Perkins	Six jars quince jelly.

SIXTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Six jars blackberry jam.
Mrs. R. S. Lockett	Perkins	Six jars raspberry jam.
Mrs. R. S. Lockett	Perkins	Display of jams and jellies in glass.
Mrs. R. S. Lockett	Perkins	Display of pickles.
Mrs. R. S. Lockett	Perkins	Display of brandied peaches.
Weber & Co.	Sacramento	Six jars blackberry jam.
Weber & Co.	Sacramento	Six jars raspberry jam.
Weber & Co.	Sacramento	Display of jams and jellies in glass.
Weber & Co.	Sacramento	Display of canned and preserved jams, jellies, etc., by factory.
Mrs. E. Waters	Clements	Display of fruit in glass.
Mrs. H. E. Parker	Penryn	Six jars quince jelly.
Mrs. H. E. Parker	Penryn	Six jars strawberry jelly.
Mrs. H. E. Parker	Penryn	Six jars blackberry jelly.
Mrs. H. E. Parker	Penryn	Six jars black raspberry jam.
Mrs. H. E. Parker	Penryn	Six jars red raspberry jam.
Mrs. H. E. Parker	Penryn	Six jars red currant jam.
Mrs. H. E. Parker	Penryn	Six jars red blackberry jam.
Mrs. H. E. Parker	Penryn	Six jars black raspberry jam.
Mrs. H. E. Parker	Penryn	Six jars red raspberry jam.
Mrs. E. H. Parker	Penryn	Display of jams and jellies in glass by producer.
Mrs. Addie Carter	Sacramento	Display of fruit in glass by other than factory.
Mrs. Addie Carter	Sacramento	Six jars raspberry jelly.
Mrs. Addie Carter	Sacramento	Six jars currant jelly.
Mrs. Addie Carter	Sacramento	Six jars blackberry jelly.
Mrs. Addie Carter	Sacramento	Six jars quince jelly.
Mrs. Addie Carter	Sacramento	Six jars blackberry jam.
Mrs. Addie Carter	Sacramento	Six jars raspberry jam.
Mrs. Addie Carter	Sacramento	Display of jams and jellies in glass.
Mrs. Addie Carter	Sacramento	Display of pickles.
Mrs. Addie Carter	Sacramento	Display of brandied peaches.
Mrs. James Lansing	Sacramento	Six jars quince jelly.
Mrs. James Lansing	Sacramento	Display of pickles.
Mrs. James Lansing	Sacramento	Display of brandied peaches.
Mrs. S. M. Vaughn	Sacramento	Six jars quince jelly.
W. D. Carpenter	Diamond Springs	Display of fruit in glass, by other than factory.
Mrs. Addie Carter	Sacramento	Six jars strawberry jelly.
Sutter Cannery Co.	Yuba City	Display of canned fruit, jams, jellies, etc., by factory.
Sutter Cannery Co.	Yuba City	Display of jams and jellies in glass.

CLASS III—DRIED AND PRESERVED FRUITS, NUTS, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Ten pounds dried apples.
Mrs. R. S. Lockett	Perkins	Ten pounds dried pears.
Mrs. R. S. Lockett	Perkins	Ten pounds dried peaches.
Mrs. R. S. Lockett	Perkins	Ten pounds dried plums.
Mrs. R. S. Lockett	Perkins	Ten pounds dried prunes.
Mrs. R. S. Lockett	Perkins	Ten pounds dried nectarines.
Mrs. R. S. Lockett	Perkins	Ten pounds dried cherries.
Mrs. R. S. Lockett	Perkins	Ten pounds dried blackberries.
Mrs. R. S. Lockett	Perkins	Ten pounds dried strawberries.
Mrs. R. S. Lockett	Perkins	Ten pounds dried figs.
Mrs. R. S. Lockett	Perkins	General display of dried fruits by producer.
W. J. Belcher	Cosumnes	Ten pounds dried peaches.
W. J. Belcher	Cosumnes	Ten pounds dried prunes.
W. J. Belcher	Cosumnes	Ten pounds dried apples.
W. J. Belcher	Cosumnes	Ten pounds dried pears.
W. J. Belcher	Cosumnes	Ten pounds dried nectarines.
W. J. Belcher	Cosumnes	Bushel yellow corn.

SIXTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
W. J. Belcher	Cosummes	General display of dried fruits by producer.
H. S. Jory	Stockton	General display of dried fruits by factory.
Weber & Co.	Sacramento	General display of dried fruits by factory.
Sam. C. Waters	Clements	Ten pounds dried figs.
Sam. C. Waters	Clements	Ten pounds dried pears.
Sam. C. Waters	Clements	Ten pounds dried peaches.
Sam. C. Waters	Clements	Ten pounds dried apricots.
Mrs. Mary E. Fox	Newcastle	Ten pounds dried apples.
Mrs. Mary E. Fox	Newcastle	Ten pounds dried pears.
Mrs. Mary E. Fox	Newcastle	Ten pounds dried peaches.
Mrs. Mary E. Fox	Newcastle	Ten pounds dried plums.
Mrs. Mary E. Fox	Newcastle	Ten pounds dried figs.
Mrs. Mary E. Fox	Newcastle	General display of dried fruits by producer.
H. E. Parker	Penryn	Ten pounds dried figs.
E. Booth	Roseville	Ten pounds dried apples.
E. Booth	Roseville	Ten pounds dried pears.
E. Booth	Roseville	Ten pounds dried peaches.
E. Booth	Roseville	Ten pounds dried prunes.
E. Booth	Roseville	Ten pounds dried figs.
E. Booth	Roseville	General display of dried fruits by producer.
A. M. Craig	Winters	Ten pounds dried apricots.
W. D. Carpenter	Diamond Springs	Ten pounds dried apples.
W. D. Carpenter	Diamond Springs	Ten pounds dried pears.
W. D. Carpenter	Diamond Springs	Ten pounds dried peaches.
W. D. Carpenter	Diamond Springs	Ten pounds dried plums.
W. D. Carpenter	Diamond Springs	Ten pounds dried prunes.
W. D. Carpenter	Diamond Springs	Ten pounds dried apricots.
W. D. Carpenter	Diamond Springs	Ten pounds dried nectarines.
W. D. Carpenter	Diamond Springs	Ten pounds dried figs.
W. D. Carpenter	Diamond Springs	General display of dried fruits by producer.

CLASS III—CULTIVATED NUTS RAISED BY EXHIBITOR.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Harry Williamson	Sacramento	Soft shell almonds.
E. F. Aiken	Sacramento	Display of peanuts.
Mrs. Jas. Lansing	Sacramento	Soft shell almonds.
B. N. Bugbey	Sacramento	Display of peanuts.

CLASS IV—GRAPES AND RAISINS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Wm. Sims	Sacramento	Best variety of wine grapes.
Mrs. R. S. Lockett	Perkins	Display of concentrated grape must.
Mrs. R. S. Lockett	Perkins	Display of California raisins.
Mrs. R. S. Lockett	Perkins	Display of seedless raisins.
Mrs. R. S. Lockett	Perkins	Six varieties table grapes.
Mrs. R. S. Lockett	Perkins	Three varieties table grapes.
Mrs. R. S. Lockett	Perkins	Best variety table grapes.
Mrs. R. S. Lockett	Perkins	Six varieties wine grapes.
Mrs. R. S. Lockett	Perkins	Three varieties wine grapes.
Mrs. R. S. Lockett	Perkins	Best variety wine grapes.
Mrs. R. S. Lockett	Perkins	General display of grapes by producer.
Wm. Sims	Sacramento	Three varieties of wine grapes.
Natoma Water and M. Co.	Natoma	Six varieties table grapes.
Natoma Water and M. Co.	Natoma	Three varieties table grapes.
Natoma Water and M. Co.	Natoma	Best variety table grapes.

SIXTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Natoma Water and M. Co.	Natoma	Six varieties wine grapes.
Natoma Water and M. Co.	Natoma	Three varieties wine grapes.
Natoma Water and M. Co.	Natoma	Best variety wine grapes.
Natoma Water and M. Co.	Natoma	General display of grapes by producer.
Wm. Foster	Lincoln	Display of California raisins.
Wm. Foster	Lincoln	Six varieties table grapes.
Wm. Foster	Lincoln	Three varieties table grapes.
Wm. Foster	Lincoln	Best variety table grapes.
James Rutter	Florin	Six varieties wine grapes.
James Rutter	Florin	Three varieties wine grapes.
James Rutter	Florin	Best variety wine grapes.
James Rutter	Florin	Six varieties table grapes.
James Rutter	Florin	Three varieties table grapes.
James Rutter	Florin	Best variety table grapes.
James Rutter	Florin	General display of grapes by producer.
James Rutter	Florin	California raisins.
James Rutter	Florin	Seedless raisins.
Thos. O. Hardie	Placerville	Six varieties table grapes.
Thos. O. Hardie	Placerville	Three varieties table grapes.
Thos. O. Hardie	Placerville	Best variety table grapes.
Thos. O. Hardie	Placerville	General display of grapes by producer.
Thos. O. Hardie	Placerville	California raisins.
J. B. Whitcomb	Colfax	Six varieties wine grapes.
J. B. Whitcomb	Colfax	Three varieties wine grapes.
J. B. Whitcomb	Colfax	Best variety wine grapes.
J. B. Whitcomb	Colfax	Six varieties table grapes.
J. B. Whitcomb	Colfax	Best variety table grapes.
J. B. Whitcomb	Colfax	Three varieties table grapes.
J. B. Whitcomb	Colfax	General display of grapes by producer.
C. T. Adams	Newcastle	Three varieties table grapes.
C. T. Adams	Newcastle	Best variety table grapes.
L. M. Boggs	Willows Ranch	Best variety table grapes.
Mrs. James Lansing	Sacramento	General display of grapes by producer.
Mrs. James Lansing	Sacramento	Six varieties table grapes.
Mrs. James Lansing	Sacramento	Three varieties table grapes.
Mrs. James Lansing	Sacramento	Best variety table grapes.
Mrs. James Lansing	Sacramento	Six varieties wine grapes.
Mrs. James Lansing	Sacramento	Three varieties wine grapes.
Mrs. James Lansing	Sacramento	Best variety wine grapes.
Robert McKay	El Dorado County	Three varieties table grapes.
Robert McKay	El Dorado County	Best variety table grapes.
W. D. Carpenter	Diamond Springs	Three varieties table grapes.
W. D. Carpenter	Diamond Springs	General display of grapes by producer.
W. D. Carpenter	Diamond Springs	Best variety table grapes.
L. Bannon	Penryn	Six varieties table grapes.
L. Bannon	Penryn	Three varieties table grapes.
L. Bannon	Penryn	Best variety table grapes.
L. Bannon	Penryn	Six varieties wine grapes.
L. Bannon	Penryn	Three varieties wine grapes.
L. Bannon	Penryn	Best variety wine grapes.
L. Bannon	Penryn	General display of grapes by producer.

CLASS V—BRANDIES AND WINES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
M. M. Estee	Napa	General display of California brandies and wines.
M. M. Estee	Napa	Grape brandy over one year old.
M. M. Estee	Napa	Grape brandy one year old.
H. W. Crabb	Napa	General display of California brandies and wines.
H. W. Crabb	Napa	Grape brandy over one year old.
H. W. Crabb	Napa	Grape brandy one year old.
Kramp Bros.	Diamond Springs	Grape brandy one year old.
Kramp Bros.	Diamond Springs	Grape brandy over one year old.

SIXTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Kramp Bros.	Diamond Springs	General display of brandies and wines.
M. S. Nevis	Sacramento	Grape brandy one year old.
M. S. Nevis	Sacramento	Grape brandy over one year old.
M. S. Nevis	Sacramento	General display of California brandies and wines.
Berringer Bros.	St. Helena	Grape brandy one year old.
Berringer Bros.	St. Helena	Grape brandy over one year old.
Berringer Bros.	St. Helena	General display of California brandies and wines.
John Kaiser	Loomis	Grape brandy one year old.
John Kaiser	Loomis	Grape brandy over one year old.

CLASS V—DRY WINES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
M. M. Estee	Napa	White wine—gautadel, hock (vintage 1885-86), riesling, sauterne, muscat.
M. M. Estee	Napa	Claret wine over one year old—cabernet, zinfandel (vintage of 1885-86), charteneau, black burgundy.
H. W. Crabb	Napa	White wine—riesling, sauterne, muscatel, chablis.
H. W. Crabb	Napa	Claret wine—burgundy, zinfandel, cabernet, sauvignon, beclau.
Mrs. R. S. Lockett ..	Perkins	White wine.
H. Cronkite	Sacramento	White wine (vintage of 1880).
H. Cronkite	Sacramento	Claret wine (vintage of 1880).
Kramp Bros.	Diamond Springs	White wine—riesling, angelica.
Kramp Bros.	Diamond Springs	Claret wine.
Berringer Bros.	St. Helena	White wine—berger, riesling.
Berringer Bros.	St. Helena	Claret wine.
M. S. Nevis	Sacramento	White wine.
M. S. Nevis	Sacramento	Claret wine.
John Kaiser	Loomis	White wine.
John Kaiser	Loomis	Claret wine.

CLASS V—SWEET WINES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
M. M. Estee	Napa	Sweet wine.
H. W. Crabb	Napa	Sweet wine—port of 1884 and 1885, blackberry, malaga, madeira, angelica.
Kramp Bros.	Diamond Springs	Sweet wine—port.
M. S. Nevis	Sacramento	Sweet wine—port, sherry, angelica.

CLASS V—SPECIAL WINES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett ..	Perkins	California sherry.
H. W. Crabb	Napa	California sherry.
H. Cronkite	Sacramento	California sherry (vintage 1881).
Kramp Bros.	Diamond Springs	California sherry.
Jno. Kaiser	Loomis	California port.
Eagle Winery	Sacramento	California port.
Eagle Winery	Sacramento	California sherry.

SIXTH DEPARTMENT—Continued.

GOLD MEDAL ENTRIES.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. R. S. Lockett	Perkins	Display of grapes, fruit, vegetables, etc.
Natoma Water and Milling Co.	Natoma	Display of grapes.
James Rutter	Florin	Display of grapes, fruit, and raisins.

SEVENTH DEPARTMENT.

CLASS I—OIL PAINTINGS, WATER COLORS, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
C. Von Perbandt	San Francisco	Eight oil paintings.
Nellie Burrell	San Francisco	Five oil paintings.
H. Duesbury	San Francisco	Two oil paintings.
Edwin Deakin	San Francisco	Twelve oil paintings and two water colors.
Norton Bush	San Francisco	Six oil paintings.
William Keith	San Francisco	Six oil paintings.
Marius Dahlgren	Oakland	One oil painting.
W. A. Coulter	San Francisco	Two oil paintings.
L. Roethe	San Francisco	Nine oil paintings, pastels, and water colors.
H. Raschen	San Francisco	Sixteen oil paintings.
Miss E. M. Sherwood	Oakland	Four oil paintings.
Miss H. M. Sherwood	Oakland	Seven oil paintings.
Ernest Narjot	San Francisco	Six oil paintings.
A. C. Rodriguez	San Francisco	Twelve oil paintings.
F. L. Heath	Santa Cruz	Six oil paintings.
Mary Curtis Richardson	San Francisco	One oil painting.
Fredrika Grosvenor	San Francisco	Ten oil and water color paintings.
Mrs. M. H. Payne	San Francisco	Five oil and water color paintings.
S. M. Brookes	San Francisco	Eight oil paintings.
E. Davidson	San Francisco	Two oil paintings.
J. A. Stanton	San Francisco	Fourteen oil and water color paintings.
G. Gianoli	San Francisco	One oil painting.
W. F. Jackson	Sacramento	Two oil paintings.
D'Estrella	San Francisco	One oil painting.
Miss Amanda Austin	Sacramento	Four oil paintings.
Mrs. N. E. Boyd	San Francisco	Seven oil and water color paintings.
C. Prosch	San Francisco	Four oil and water color paintings.
Miss May Bailey	Oakland	Four oil paintings.
F. Jay Lewis	Newcastle	Two oil paintings.
Chris. Jargensen	San Francisco	Six water color paintings.
Mrs. J. E. Bruner	San Francisco	Three oil paintings.
Hugo Fisher	San Francisco	One water color painting.
Herrick	San Francisco	One oil painting.
Sacramento School of Design	Sacramento	General display of drawings in crayon, charcoal, and pencil, oil painting, portraiture, still life, sketches, etc.

TRANSACTIONS OF THE
SEVENTH DEPARTMENT—Continued.
CLASS I—AMATEURS' GALLERY.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Miss Hattie Deamer	Woodland .....	..... Crayon (Jersey).
Miss Hattie Deamer	Woodland .....	..... Crayon (Alderney).
Belle Hay	San Francisco .....	..... Two oil paintings.
Mrs. E. L. Brackett	San Francisco .....	..... Eight oil paintings.
Miss A. Ghirardelli	San Francisco .....	..... Five oil paintings.
Paul Menegozzi	San Francisco .....	..... Two oil paintings, two crayon drawings.
Miss Leonora Liés	San Francisco .....	..... Two oil paintings.
Miss Lillie Blue	Sacramento .....	..... Two oil paintings.
Mrs. C. F. Smith	Sacramento .....	..... Three oil paintings.
Miss Addie L. Hughes	Sacramento .....	..... Two crayon drawings.
John Devillbiss	Winters .....	..... One crayon drawing.
John Devillbiss	Winters .....	..... One painting on plush.
Fred. Dowane	Wheatland .....	..... Eight oil paintings.
Miss N. LaBone	Sacramento .....	..... Seven oil paintings.
Miss N. LaBone	Sacramento .....	..... One frame charcoal sketches.
Miss M. Rivett	Sacramento .....	..... Five oil paintings.
Miss Ida F. Coleman	Napa .....	..... Five water color paintings.
Miss E. Hummel	Sacramento .....	..... Three crayon drawings, one oil painting.
Mrs. J. B. Short	Ophir .....	..... One crayon drawing.
Mrs. G. G. Burnett	San Francisco .....	..... One crayon drawing.

CLASS II—PHOTOGRAPHS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
A. O. Gregory	Sacramento .....	..... Display of photographs.
Geo. D. Stewart	Sacramento .....	..... One hundred and ten photographs of El Dorado County.
Theo. W. Schwamb	Sacramento .....	..... Glazed photographs.
Julius Asher	Sacramento .....	..... Collection of photographs.
Julius Asher	Sacramento .....	..... Collection of retouched photographs.
Julius Asher	Sacramento .....	..... Collection of colored photographs.
Julius Asher	Sacramento .....	..... One photo in india ink.
Humboldt County Exhibit.	Eureka .....	..... Display of photographs—Humboldt Co.

CLASS III—ETCHINGS, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Flora C. Kendall	Oakland .....	..... One pencil drawing.
Oscar Deakin	San Francisco .....	..... One case pen sketches.
J. A. Stanton	San Francisco .....	..... Pen and ink drawings.
J. A. Stanton	San Francisco .....	..... Pen sketches.
Leonora Liés	San Francisco .....	..... Three pen and ink drawings.
Leonora Liés	San Francisco .....	..... One india ink drawing.
L. Roethe	San Francisco .....	..... Three pen and ink drawings.
L. Roethe	San Francisco .....	..... One case india ink drawings.
L. Roethe	San Francisco .....	..... One pencil drawing.
Oscar Deakin	San Francisco .....	..... One charcoal and pen drawing.
J. A. Stanton	San Francisco .....	..... One india ink drawing.
Jules E. Pages	San Francisco .....	..... One pen and ink drawing.
Katharine Dewey	Sacramento .....	..... One pen and ink drawing.
J. C. Bainbridge	Sacramento .....	..... Two pen drawings.
Sacramento Business Coll.	Sacramento .....	..... Two frames, pen drawings.
Theodore W. Schwamb	Sacramento .....	..... Satin etchings.
Mrs. J. B. Short	Ophir, Placer Co. ....	..... India ink drawing.

SEVENTH DEPARTMENT—Continued.

CLASS IV—STATUARY, FRESCO, ETC.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
F. Happersberger	San Francisco	One design for memorial tablet.
F. Happersberger	San Francisco	Three medallion portraits.
F. Happersberger	San Francisco	One bronze medallion.
F. Happersberger	San Francisco	One statuette.
W. A. Newell	San Francisco	Three figures in plaster.
Capital Soap Co.	Sacramento	One specimen carved work.

CLASS V—PENMANSHIP.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Sacramento Business Coll.	Sacramento	Display of penmanship.
J. C. Bainbridge	Sacramento	Display of penmanship.

CLASS VI—JUVENILE.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Lena Devillbiss	Winters, Yolo Co.	One crayon drawing.
Ray Doan	Sacramento	One pencil drawing.

EIGHTH DEPARTMENT.

COUNTY EXHIBITS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Fred. W. Bell	Eureka	Humboldt County exhibit.
Frank L. Platt	Vacaville	Solano County exhibit.
F. C. Radcliffe	Colusa	Colusa County exhibit.
W. R. Selkirk	Placerville	El Dorado County exhibit.
Geo. C. McMullen	Sacramento	Sacramento County exhibit.
B. M. Berry	Newcastle	Placer County exhibit.
W. G. Murphy	Yuba City	Yuba and Sutter County exhibit.
P. H. Coffman	Red Bluff	Tehama County exhibit.
J. D. Huffman	Lodi	San Joaquin County exhibit.
J. R. Nickeson	Grass Valley	Nevada County exhibit.

NINTH DEPARTMENT.

MISCELLANEOUS.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Donn-Ellan & Co.	San Francisco	Fifteen cases Canyonell.
Flora C. Kendall	Oakland	One pair knit woolen stockings.
Mrs. J. Storch	Sacramento	One chair scarf (embroidered).
Mrs. J. Storch	Sacramento	Two embroidered pallets.
Miss Ida M. Isaacs	Sacramento	Embroidered pond lily (framed).
Miss Ida M. Isaacs	Sacramento	One zephyr knitted cape.
Miss Clara Miller	Sacramento	Display of paper flowers.
Miss Lillie Karcher	Sacramento	Display of paper flowers.
Miss Minnie Heisen	Sacramento	Embroidered piano scarf (two ends).
Miss Minnie Heisen	Sacramento	Crochet lounge cover and tidy.
Miss Minnie Heisen	Sacramento	Two toilet sets (bobinet work).
Mrs. Leland Howe	Sacramento	Embroidered silk elastics.
Mrs. Leland Howe	Sacramento	Three baskets made of corn husks.
Mrs. Leland Howe	Sacramento	Tatting collar.
Mrs. D. N. Fassett	Sacramento	Embroidered silk quilt.
Wm. D. O'Kane	San Francisco	Horse boots and turf goods.
Rose White	Sacramento	Linen bureau scarf.
Mrs. C. E. Crocker	Sacramento	Banner fire screen (ribbon work).
Miss Mary Jones	Sacramento	Fine crocheting and hand sewing.
Miss Mary Jones	Sacramento	Embossed tinsel embroidery (two pieces).
Miss Mary Jones	Sacramento	Paper flowers.
Miss Mary Jones	Sacramento	Fine hand sewing.
Miss Mary Jones	Sacramento	Etching embroidery.
Miss Mary Jones	Sacramento	Crochet beaded purse.
Miss Mary Jones	Sacramento	Fine crochet needlework.
A. M. McCollum	Sacramento	Skeleton of a horse.
Mrs. N. B. Vivian	Sacramento	Crystallization work.
Mrs. N. B. Vivian	Sacramento	Agricultural vase made of seed.
Mrs. N. B. Vivian	Sacramento	Patchwork bedspread.
Mrs. N. B. Vivian	Sacramento	Bracket made of lace.
Mrs. N. B. Vivian	Sacramento	Glass bracket.
Miss Flora Vivian	Sacramento	Barbatine modeling.
Mrs. N. B. Vivian	Sacramento	Landscape picture made of putty.
Mrs. Warren Cole	Sacramento	White quilt.
Whittier, Fuller & Co.	Sacramento	Display of interior decorations.
Whittier, Fuller & Co.	Sacramento	Display of gilt easels.
Whittier, Fuller & Co.	Sacramento	Display of bouquet stands.
Whittier, Fuller & Co.	Sacramento	Display of picture frames.
Mrs. C. A. Young	Sacramento	Crochet work.
J. K. Kendrick	Sacramento	Stove drum (model).
J. M. Conner	San Francisco	Royal baking pan.
J. M. Conner	San Francisco	Safety window fastener.
Daily "Examiner"	San Francisco	Display of electrotype plates.
Della H. Krull	Sacramento	Pressed natural flowers and cereal work.
B. F. Farrar	San Francisco	Two Ne Plus Ultra spring beds.
B. F. Farrar	San Francisco	Two Ne Plus Ultra mattresses.
B. F. Farrar	San Francisco	Two improved woven wire mattresses.
B. F. Farrar	San Francisco	One upholstered spring cot.
B. F. Farrar	San Francisco	Four sofa beds.
Phebe C. Brown	Sacramento	Silk chair.
Phebe C. Brown	Sacramento	Tidy in silk embroidery.
Phebe C. Brown	Sacramento	Tidy in Spanish.
D. H. Emmons	Sacramento	One pair black silk mitts (hand knitted).
D. H. Emmons	Sacramento	One pair wool mittens.
Wm. Foster	Dixon	One silk quilt.
Mrs. S. E. Stevens	Sacramento	made by Mrs. Mattie Scarlet, Suisun.
Mrs. S. E. Stevens	Sacramento	One satin finish painted banner.
Mrs. S. E. Stevens	Sacramento	One cross, made of mineral specimens.
Mrs. S. E. Stevens	Sacramento	Display of stamped goods.
Mrs. S. E. Stevens	Sacramento	One French bisque doll.
Mrs. S. E. Stevens	Sacramento	Perforated card-board cross.
Mrs. C. E. Crocker	Sacramento	One painted fire screen.
Mrs. C. E. Crocker	Sacramento	Three painted plaques.
Mrs. C. E. Crocker	Sacramento	One painted banner.

NINTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Mrs. C. E. Crocker	Sacramento	One painted tambourine.
Mrs. C. E. Crocker	Sacramento	One painted scent bag.
G. G. Wickson & Co.	San Francisco	One Remington typewriter.
G. G. Wickson & Co.	San Francisco	One stenograph (short-hand machine).
G. G. Wickson & Co.	San Francisco	Display of typewriting desks.
E. C. Mead & Co.	Sacramento	Silver cream or enamel.
Mrs. W. Dana Perkins	Rocklin	Handkerchief case.
Mrs. P. S. Lawson	Sacramento	Lounge afghan.
Mrs. P. S. Lawson	Sacramento	Silk embroidery satchel.
Mrs. P. S. Lawson	Sacramento	Fancy work basket.
Truman S. Clark & Son	San Francisco	One folding bed.
Truman S. Clark & Son	San Francisco	One chiffonier child's bed.
Truman S. Clark & Son	San Francisco	Princess dressing case and washstand combined.
Truman S. Clark & Son	San Francisco	One folding wire cot.
Truman S. Clark & Son	San Francisco	Two camp chairs.
Truman S. Clark & Son	San Francisco	One steamer chair.
Truman S. Clark & Son	San Francisco	One folding bed, writing desk form.
R. E. Gogings	Sacramento	Veterinary medicine chest.
R. E. Gogings	Sacramento	Illusion face powder.
McKim & Orth	Sacramento	Knitting worsteds.
McKim & Orth	Sacramento	Fancy embroidery materials.
M. L. Hammer	Sacramento	One grand Chickering upright piano.
M. L. Hammer	Sacramento	One Chickering upright piano.
M. L. Hammer	Sacramento	One Chickering square piano.
M. L. Hammer	Sacramento	One Hallett & Cumston grand upright piano.
M. L. Hammer	Sacramento	One Hallett & Cumston upright piano.
M. L. Hammer	Sacramento	Two Wilcox & White organs.
M. L. Hammer	Sacramento	Six mohair plush-top stools.
M. L. Hammer	Sacramento	One silk-plush stool.
M. L. Hammer	Sacramento	Five rubber piano covers.
M. L. Hammer	Sacramento	One upright piano cover, embroidered plush.
M. L. Hammer	Sacramento	Three upright piano covers, cloth.
M. L. Hammer	Sacramento	One violin case, leather.
M. L. Hammer	Sacramento	One large music box.
M. L. Hammer	Sacramento	One small music box.
M. L. Hammer	Sacramento	One viola.
M. L. Hammer	Sacramento	Six violins.
M. L. Hammer	Sacramento	Five guitars.
M. L. Hammer	Sacramento	Five banjos.
M. L. Hammer	Sacramento	One concertina.
M. L. Hammer	Sacramento	Six flute harmonicas.
M. L. Hammer	Sacramento	Twenty-two accordions.
M. L. Hammer	Sacramento	Six violin bows.
M. L. Hammer	Sacramento	One mandolin case.
M. L. Hammer	Sacramento	One banjo case, canvas.
M. L. Hammer	Sacramento	One cornet case.
M. L. Hammer	Sacramento	Two flute cases.
M. L. Hammer	Sacramento	Two bijou orchestrone.
M. L. Hammer	Sacramento	Five flutes.
M. L. Hammer	Sacramento	One autoharp.
M. L. Hammer	Sacramento	One piccolo case.
M. L. Hammer	Sacramento	Six picolos.
M. L. Hammer	Sacramento	Six music folios.
M. L. Hammer	Sacramento	Four tamborines.
M. L. Hammer	Sacramento	Three guitar cases.
M. L. Hammer	Sacramento	Four dozen harmonicas.
M. L. Hammer	Sacramento	One dozen violin bridges.
M. L. Hammer	Sacramento	One and one half dozen cello bridges.
M. L. Hammer	Sacramento	Two cello tailpieces.
M. L. Hammer	Sacramento	One set double bass strings.
M. L. Hammer	Sacramento	Six guitar bridges.
M. L. Hammer	Sacramento	Six violin tailpieces.
M. L. Hammer	Sacramento	Six jewsharps.
M. L. Hammer	Sacramento	One set guitar machines.
M. L. Hammer	Sacramento	Two tuning forks.
M. L. Hammer	Sacramento	Two nickel music stands.
M. L. Hammer	Sacramento	One and one half dozen music rolls.

TRANSACTIONS OF THE
NINTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
M. L. Hammer	Sacramento.	One dozen brass and tin flageolets.
M. L. Hammer	Sacramento.	One cello finger-board.
M. L. Hammer	Sacramento.	One and one half dozen violin resin.
M. L. Hammer	Sacramento.	One bass drum.
M. L. Hammer	Sacramento.	One snare drum.
M. L. Hammer	Sacramento.	One Eb bass.
M. L. Hammer	Sacramento.	One Bb tenor.
M. L. Hammer	Sacramento.	Two brass Eb cornets.
M. L. Hammer	Sacramento.	Two brass Bb cornets.
M. L. Hammer	Sacramento.	One nickel Eb cornet.
M. L. Hammer	Sacramento.	One nickel Bb cornet.
M. L. Hammer	Sacramento.	One Bb baritone.
M. L. Hammer	Sacramento.	One bass drum stick.
M. L. Hammer	Sacramento.	One and one half dozen mouthpieces.
M. L. Hammer	Sacramento.	One pair snare drum sticks (nickel mounted).
M. L. Hammer	Sacramento.	One and one half dozen banjo tailpieces.
M. L. Hammer	Sacramento.	One metronome.
M. L. Hammer	Sacramento.	One set cello pegs.
M. L. Hammer	Sacramento.	Three sets celluloid violin and banjo pegs.
M. L. Hammer	Sacramento.	One and one half dozen violin mutes.
M. L. Hammer	Sacramento.	One and one half dozen cello resin.
M. L. Hammer	Sacramento.	One guitar capo d'astro.
M. L. Hammer	Sacramento.	Three guitar capo wood.
M. L. Hammer	Sacramento.	One plush music folio.
M. L. Hammer	Sacramento.	Two clarionets.
Suie On (Chinese)	Sacramento.	Assortment of Chinese and Japanese goods.
Mrs. P. S. Lawson	Sacramento.	Fancy wall pocket.
Mrs. W. E. Terry	Sacramento.	Crochet bedspread.
Mrs. Mattie M. Fewel	Sacramento.	Two silk collars, crochet work.
Arper Bros.	Oakland	Perfection lamp filler.
"San Francisco Chronicle"	San Francisco	Display of stereotype plates and premiums.
California Cotton Mills Co.	East Oakland	Display of cotton fabrics manufactured by them in California.
California Cotton Mills Co.	East Oakland	Display of linen fabrics manufactured by them in California.
John F. Cooper	Sacramento.	One square piano, Mathusek.
John F. Cooper	Sacramento.	Two Little Giant, Mathusek, upright pianos.
John F. Cooper	Sacramento.	Five style "H," Mathusek, upright pianos.
John F. Cooper	Sacramento.	One style "F," Mathusek upright piano.
John F. Cooper	Sacramento.	One cabinet grand piano, Behr Bros.
John F. Cooper	Sacramento.	One style "13" Wheelock piano, French walnut.
John F. Cooper	Sacramento.	One Loring & Blake chapel organ.
John F. Cooper	Sacramento.	Two parlor organs, Chicago cottage.
John F. Cooper	Sacramento.	One celestina.
John F. Cooper	Sacramento.	One clariona.
John F. Cooper	Sacramento.	One xylophone.
John F. Cooper	Sacramento.	One orchestra bells.
John F. Cooper	Sacramento.	Four mandolins.
John F. Cooper	Sacramento.	Ten guitars.
John F. Cooper	Sacramento.	Ten banjos.
John F. Cooper	Sacramento.	Fifteen accordions.
John F. Cooper	Sacramento.	One bass drum.
John F. Cooper	Sacramento.	Three snare drums.
John F. Cooper	Sacramento.	Six cornets.
John F. Cooper	Sacramento.	Two German zithers.
John F. Cooper	Sacramento.	Six flutes.
John F. Cooper	Sacramento.	Sixteen fifes.
John F. Cooper	Sacramento.	One hundred and fifty pieces sheet music.
John F. Cooper	Sacramento.	Thirty music books.
John F. Cooper	Sacramento.	Twelve piano covers.
John F. Cooper	Sacramento.	Two clarionets.
John F. Cooper	Sacramento.	Six dozen harmonicas.
John F. Cooper	Sacramento.	One violoncello.
John F. Cooper	Sacramento.	Fifteen piano stools.
John F. Cooper	Sacramento.	Six music boxes.

NINTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
John F. Cooper	Sacramento	Two picolos.
John F. Cooper	Sacramento	Twelve ocarinas.
John F. Cooper	Sacramento	Six music folios.
John F. Cooper	Sacramento	Six music rolls.
John F. Cooper	Sacramento	Four triangles.
John F. Cooper	Sacramento	Two music stands (nickel-plated).
John F. Cooper	Sacramento	Two music stands (japanned).
John F. Cooper	Sacramento	Two nickel-plated fifes.
John F. Cooper	Sacramento	One silver Boehm flute (value \$250).
John F. Cooper	Sacramento	Thirteen tambourines.
John F. Cooper	Sacramento	Forty-two violin bows.
John F. Cooper	Sacramento	Two hundred fixtures for musical instruments.
John F. Cooper	Sacramento	Assortment of piano polish.
John F. Cooper	Sacramento	Miscellaneous assortment of violin, guitar, and banjo strings.
John F. Cooper	Sacramento	Twelve piano scarfs.
John F. Cooper	Sacramento	One Bauer flute.
John F. Cooper	Sacramento	One Meyer flute, four regular flutes.
John F. Cooper	Sacramento	One mechanical orchestrane (style "C").
John F. Cooper	Sacramento	One mechanical orchestrane (style "B").
John F. Cooper	Sacramento	One burnt Mathusek piano, (to show construction of said pianos).
John F. Cooper	Sacramento	Twenty accordeons (new style).
California Cotton Mills Co.	East Oakland	Cotton ducks and towels.
California Cotton Mills Co.	East Oakland	Cotton carpet warp.
California Cotton Mills Co.	East Oakland	Cotton seine, sail, sewing, and wrapping twines.
California Cotton Mills Co.	East Oakland	Linen sack twine.
Miss Emma Clausen	Blacks, Yolo Co.	Linen towels and tablecloths.
Miss Emma Clausen	Blacks, Yolo Co.	Silk embroidery on muslin.
A. C. Tufts	Sacramento	Floss embroidery on muslin.
Mrs. E. M. Wilson	San Francisco	Dr. Lepper's Electric Life, and Mountain Tea Extract.
Mrs. E. M. Wilson	San Francisco	Wilson's Vaporizing Inhaler.
Leak Glove Mfg Co.	San Francisco	Flour bin.
Leak Glove Mfg Co.	San Francisco	Patent process of tanning leather (Napa style).
Leak Glove Mfg Co.	San Francisco	Patent process of tanning leather (Sierra style).
Leak Glove Mfg Co.	San Francisco	Glove with patent thumb.
Isaac Lea	Florin	Display of angora robes.
Isaac Lea	Florin	Bundles green licorice.
Isaac Lea	Florin	Display green olives.
Isaac Lea	Florin	Display dried olives.
Isaac Lea	Florin	One limb chestnuts.
Harry Williamson	Sacramento	Soft shell almonds.
Isaac Lea	Florin	Japanese persimmons.
Isaac Lea	Florin	One limb pomegranates.
Mrs. R. S. Lockett	Perkins	Blackberry wine.
Mrs. R. S. Lockett	Perkins	Strawberry wine.
P. M. Artz	Perkins	Common field squash.
Mrs. H. R. Sutliff	Sacramento	Green quinces.
Del Monte Milling Co.	San Francisco	Breakfast cereals, meals, etc.
J. H. Hamilton	Sacramento	Four yankee pumpkins.
J. H. Hamilton	Sacramento	Four cushaw squashes.
J. H. Hamilton	Sacramento	Display of pomegranates.
Weber & Co.	Sacramento	Display of pure spices.
Weber & Co.	Sacramento	Display of flavoring extracts.
Weber & Co.	Sacramento	General display of groceries.
E. F. Aiken	Sacramento	Fourteen varieties pumpkins.
E. F. Aiken	Sacramento	Twenty-five squashes.
E. F. Aiken	Sacramento	New Zealand pumpkin.
E. F. Aiken	Sacramento	Early orange marrow pumpkin.
E. F. Aiken	Sacramento	Nest egg gourd.
E. F. Aiken	Sacramento	Burpees golden upright peppers.
E. F. Aiken	Sacramento	Ruby king peppers.
C. McCreary & Co.	Sacramento	Snowflake superfine shipping flour.
Mrs. Jas. Curtis	Yolo	One bale hops.
Mrs. Jas. Curtis	Yolo	One sheaf oats.

TRANSACTIONS OF THE
NINTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
E. F. Aiken	Sacramento	Kelsey Japan plum.
E. F. Aiken	Sacramento	Golden Beauty plum.
B. N. Bugbey	Sacramento	Broom corn and seed.
B. N. Bugbey	Sacramento	Egyptian corn.
B. N. Bugbey	Sacramento	Winter squash.
B. N. Bugbey	Sacramento	Wild grass.
B. N. Bugbey	Sacramento	Wild oats.
Mrs. F. P. Lowell	Sacramento	Six glasses plum jelly.
Mrs. F. P. Lowell	Sacramento	Six glasses grape jelly.
J. D. Huffman	Lodi	Artistically arranged display of grain.
R. J. Merkle	Sacramento	One bale of hops.
R. J. Merkle	Sacramento	One pole of hops.
Jno. Wieland's Brewing Co.	San Francisco	Export beer and draught lager.
Jno. L. Stubbs	Sacramento	Quinces.
Jno. L. Stubbs	Sacramento	Pomegranates.
Mrs. H. E. Parker	Penryn	Muscat grape jelly.
Mrs. H. E. Parker	Penryn	Tokay grape jelly.
Mrs. H. E. Parker	Penryn	Catawba grape jelly.
Mrs. H. E. Parker	Penryn	Emperor grape jelly.
Mrs. H. E. Parker	Penryn	Apple jelly.
Mrs. H. E. Parker	Penryn	Oakshade plum jelly.
Mrs. H. E. Parker	Penryn	Kelsey plum jelly.
Mrs. H. E. Parker	Penryn	Gross prune jelly.
Mrs. H. E. Parker	Penryn	Peach jelly.
Mrs. H. E. Parker	Penryn	Crabapple jelly.
Mrs. H. E. Parker	Penryn	Pear jelly.
Mrs. H. E. Parker	Penryn	Oakshade plum jam.
Mrs. H. E. Parker	Penryn	Strawberry jam.
Mrs. H. E. Parker	Penryn	Tomato catchup.
Mrs. H. E. Parker	Penryn	Spiced figs.
E. P. Figg	Sacramento	Carmen Island salt.
E. P. Figg	Sacramento	Liverpool salt.
W. R. Strong & Co.	Sacramento	Artistically arranged display of fruits and vegetables.
A. M. Craig	Winters	Winters fruit-belt display.
C. W. Cox	Sacramento	One sugar beet.
Mrs. Addie Carter	Sacramento	Six jars apple jelly.
Mrs. Addie Carter	Sacramento	Six jars crabapple jelly.
E. Booth	Roseville	Green quinces.
L. M. Boggs	Willows Ranch	Hops.
Mrs. R. S. Lockett	Perkins	Display of gourds.
Mrs. R. S. Lockett	Perkins	Display of cotton.
Mrs. R. S. Lockett	Perkins	Twelve varieties squash.
L. M. Boggs	Willows Ranch	Two crates vegetables.
L. M. Boggs	Willows Ranch	Timothy.
L. M. Boggs	Willows Ranch	Wheat.
Mrs. James Lansing	Sacramento	Green quinces.
Mrs. James Lansing	Sacramento	English walnuts.
Mrs. James Lansing	Sacramento	Chestnuts.
Japanese Tree Impt'g Co.	San Francisco	Japanese seedling vonshin orange trees.
Thomas McConnell	Elk Grove	Field squash.
Polly, Heilbron & Co.	Kingsburg	Three bales hops.
Mrs. J. Hillhouse	Sacramento	Sweet bread.
G. T. Rich	Sacramento	Cotton plant.
S. H. Gerrish	Sacramento	Banana plant.
Lizzie B. Aiken	Sacramento	Cream muffins.
Mrs. Manuel Silva	Sacramento	Three marrowfat squashes.
Mrs. S. M. Vaughn	Sacramento	Apple jelly.
Mrs. S. M. Vaughn	Sacramento	Peach jelly.
Mrs. S. M. Vaughn	Sacramento	Grape jelly.
B. N. Bugbey	Sacramento	Farm exhibit.
Howard M. Flint	Sacramento	One bale hops.
W. C. Curtis	Woodland	Display of sheaf wheat.
W. D. Carpenter	Diamond Springs.	Quinces.
James Askev	El Dorado Co.	Cucumbers.
J. D. Huffman	Lodi	Artistic design in wheat (a harvester).

NINTH DEPARTMENT--Continued.

GOLD MEDAL ENTRIES.

Embracing all exhibits not entered, and for which no premiums are offered in any of the preceding departments.

EXHIBITOR.	P. O. Address.	Articles Exhibited.
Whittier, Fuller & Co.	Sacramento.....	Picture frames, decorative goods, etc.
White Sewing Machine Co.	San Francisco	Sewing machines, etc.
Weinstock & Lubin.....	Sacramento.....	Meritorious exhibit.
California Cotton Mills Co.	East Oakland	Meritorious exhibit of linen and cotton goods manufact'd by them in California.
B. F. Farrar	San Francisco	Meritorious exhibit of furniture.
Mrs. E. M. Wilson.....	San Francisco	Vaporizing inhaler and flour bin.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—THOROUGHBRED HORSES.				
<i>Stallions.</i>				
Best four years old and over	Theo. Winters	Sacramento	Joe Hooker	\$10 00
Best two years old	L. C. Shippee	Stockton	Joe	15 00
Best one year old	Theo. Winters	Sacramento	The Ozar	15 00
Second best one year old	D. J. McCarty	San Francisco	Sureto	7 50
Best colt under one year old	Theo. Winters	Sacramento		7 50
<i>Mares.</i>				
Best four years old and over, with colt.	Theo. Winters	Sacramento	Marion	40 00
Second best four years old and over, with colt.	Theo. Winters	Sacramento	Mattie Glenn	20 00
Best two years old	P. Siebenthaler	Sacramento	Verona	11 25
Best one year old	C. Halverson	Routiers		7 50
Second best one year old	Theo. Winters	Sacramento		10 00
Best under one year old	C. Halverson	Routiers		7 50
THOROUGHBRED FAMILIES.				
Best stallion and five of his colts.	Theo. Winters	Sacramento	Joe Hooker and five colts.	37 50
Best dam and not less than two colts	Theo. Winters	Sacramento	Marion and two colts.	40 00
FAMILIES OTHER THAN THOROUGHERED.				
Best stallion and five of his colts	M. W. Hicks	Sacramento	Sterling and family.	50 00
Best dam and two of her colts	Mrs. W. C. Stahl	Pleasant Grove	Lucy and two colts.	40 00
CLASS II—HORSES OF ALL WORK.				
<i>Stallions.</i>				
Best four years old and over	W. E. Comstock	Pleasant Grove	Maje	40 00
Second best four years old and over	T. Skillman	Petaluma	Expansion	20 00
Best three years old	Frank R. Shaw	Salina, Kansas	Leopard	22 50
Best two years old	Frank R. Shaw	Salina, Kansas	Francis 2d	15 00
Second best two years old	John Adams	Brooks Station	Mark Gibson	10 00
Best one year old	P. Russell	Brighton	Selim	15 00

Second best one year old.....	J. A. McCloud.....	Stockton.....	Johnny Vernon.....	7 50
Best under one year old.....	R. J. Merkle.....	Sacramento.....	Dennis.....	7 50
<i>Mares.</i>				
Best four years old and over, with colt.....	A. D. Miller.....	Walsh Station.....	Lucy Gray.....	40 00
Second best four years old and over, with colt.....	H. H. Wilson.....	Nicolaus.....	Fannie.....	20 00
Best four years old and over.....	W. E. Constock.....	Pleasant Grove.....	Dolly Douglas.....	30 00
Second best four years old and over.....	W. Cole.....	Stockton.....	Lena.....	15 00
Best two years old.....	J. A. McCloud.....	Stockton.....	Nellie Vernon.....	15 00
Second best two years old.....	W. E. Constock.....	Pleasant Grove.....	Flora Vandee.....	7 50
Best one year old.....	W. E. Constock.....	Pleasant Grove.....	Topay.....	7 50
Best suckling colt.....	H. H. Wilson.....	Nicolaus.....	Jessie.....	10 00
Second best suckling colt.....	J. Heintz.....	Marysville.....	Maud.....	5 00
CLASS III—DRAFT HORSES—NORMANS.				
<i>Stallions.</i>				
Best four years old and over.....	T. Skillman.....	Petaluma.....	Ernest Perriott.....	40 00
Second best four years old and over.....	A. J. Ogden.....	Woodland.....	Hatchet.....	20 00
Best one year old.....	B. F. Chandler.....	Elmira.....	Pixley.....	11 25
Best under one year.....	B. F. Chandler.....	Elmira.....	Shasta.....	7 50
<i>Mares.</i>				
Best four years and over, with colt.....	B. F. Chandler.....	Elmira.....	Bisch.....	30 00
CLASS IV—PERCHERONS.				
<i>Stallions.</i>				
Best four years old and over.....	C. K. Bailey.....	Stockton.....	Fasian.....	40 00
Second best four years old and over.....	T. Skillman.....	Petaluma.....	Hecale.....	20 00
Best three years old.....	T. Skillman.....	Petaluma.....	Paradis.....	30 00
Second best three years old.....	C. K. Bailey.....	Stockton.....	Black.....	15 00
<i>Mares.</i>				
Best four years old and over, with colt.....	C. K. Bailey.....	Stockton.....	St. Julia.....	30 00
Best suckling colt.....	C. K. Bailey.....	Stockton.....	Carrie.....	7 50
CLASS V—CLYDESDALES.				
<i>Stallions.</i>				
Best four years old and over.....	Jas. Roberts.....	Irvington.....	Duke.....	30 00
Best three years old.....	F. R. Shaw.....	Salina, Kansas.....	Lord Pollock 2d.....	22 50
Best two years old.....	F. R. Shaw.....	Salina, Kansas.....	Sir Francis.....	15 00
Best one year old.....	Jas. Roberts.....	Irvington.....	Prince.....	11 25
Best under one year old.....	James Roberts.....	Irvington.....	Jubilee.....	7 50

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
<i>Mares.</i>				
Best four years old and over, with colt.....	James Roberts.....	Irvington.....	Jule.....	\$30 00
Best four years old and over.....	F. R. Shaw.....	Salina, Kansas.....	Princess Beatrice.....	22 50
Best three years old.....	James Roberts.....	Irvington.....	Dansel.....	18 75
Best two years old.....	James Roberts.....	Irvington.....	Dolly.....	11 55
CLASS VI—DRAFT HORSES, OTHER THAN NORMANS, PER- CHERONS, OR CLYDESDALES.				
<i>Stallions.</i>				
Best four years old and over.....	H. S. Modlison.....	Sacramento.....	Donald Dinnie.....	40 00
Second best four years old and over.....	R. G. McKenzie.....	Nicolaus.....	Earl Derby.....	20 00
Best three years old.....	Frank Cox.....	Elk Grove.....	Charley.....	30 00
Second best three years old.....	F. R. Shaw.....	Salina, Kansas.....	Doctor.....	15 00
Best two years old.....	R. J. Merkle.....	Sacramento.....	Vandee, Jr.....	20 00
Second best two years old.....	A. J. Ogden.....	Woodland.....	French.....	15 00
Best one year old.....	R. J. Merkle.....	Sacramento.....	Dumas, Jr.....	15 00
Second best one year old.....	James Coil.....	Sacramento.....	Young Donald Dinnie.....	7 50
Best under one year old.....	R. J. Merkle.....	Sacramento.....	Mack.....	7 50
<i>Mares.</i>				
Best four years old and over, with colt.....	R. J. Merkle.....	Sacramento.....	Nellie.....	40 00
Second best four years old and over, with colt.....	H. S. Modlison.....	Sacramento.....	Maggie.....	20 00
Best four years old and over.....	R. J. Merkle.....	Sacramento.....	Fannie.....	30 00
Second best four years old and over.....	James Coil.....	Sacramento.....	Belle.....	15 00
Best three years old.....	H. H. Wilson.....	Nicolaus.....	Myrtle.....	25 00
Second best three years old.....	C. B. Harris.....	Nicolaus.....	Fannie.....	12 50
Best two years old.....	H. H. Wilson.....	Nicolaus.....	Belle.....	15 00
Second best two years old.....	C. B. Harris.....	Nicolaus.....	Minnie.....	7 50
Best suckling colt.....	R. J. Merkle.....	Sacramento.....	Sue.....	10 00
Second best suckling colt.....	H. S. Modlison.....	Sacramento.....	Nellie.....	5 00
CLASS VII—ROADSTERS.				
<i>Stallions.</i>				
Best four years old and over.....	R. C. Sargent.....	Lodi.....	Ross S.....	40 00
Second best four years old and over.....	Henry Klemp.....	Pleasant Grove.....	Privateer.....	20 00
Best three years old.....	F. P. Lowell.....	Sacramento.....	Don Marion.....	30 00
Second best three years old.....	P. Fitzgerald.....	Woodland.....	Kilmore.....	15 00

Best two years old.....	H. S. Casey.....	Sacramento.....	Peerless.....	20 00
Second best two years old.....	George A. Pierce.....	Woodland.....	Tilton Almont, Jr.....	10 00
Best one year old.....	George Woodard.....	Woodland.....	General.....	15 00
Second best one year old.....	Henry Klemp.....	Pleasant Grove.....	Privateer, Jr.....	7 50
Best suckling colt.....	L. Whitmore.....	Woodland.....	Bookkeeper.....	10 00
Second best suckling colt.....	H. C. Howard.....	Brighton.....	Archie.....	5 00
Best gelding.....	B. F. True.....	Chico.....	Bun.....	40 00
Second best gelding.....	J. L. McCord.....	Sacramento.....	Orphan Boy.....	20 00
<i>Mares.</i>				
Best four years old and over.....	John Batchelor.....	Sacramento.....	Mayfly.....	40 00
Second best four years old and over.....	C. E. Pinkham.....	Sacramento.....	Crescent.....	20 00
Best three years old.....	Willard Gardner.....	Marysville.....	Madia.....	30 00
Second best three years old.....	L. Whitmore.....	Woodland.....	Late.....	15 00
Best two years old.....	E. C. Morgan.....	Grass Valley.....	Beatrice.....	20 00
Second best two years old.....	C. R. Hopkin.....	Woodland.....	Yolo Maid.....	10 00
Best one year old.....	C. R. Hopkin.....	Woodland.....	Yola.....	10 00
Second best one year old.....	J. A. McCloud.....	Stockton.....	Nera Vernon.....	5 00
Best suckling colt.....	J. J. McGrath.....	Marysville.....	Allie.....	10 00
Second best suckling colt.....	Mrs. W. C. Stahl.....	Pleasant Grove.....	Francis.....	5 00
CLASS VIII—CARRIAGE HORSES.				
Best carriage team.....	C. H. Corey.....	San José.....	Tom and Jerry.....	50 00
Second best carriage team.....	E. M. Leitch.....	Sacramento.....	Garland and Sister.....	25 00
Shetland pony team.....	D. J. McCarty.....	San Francisco.....	Goldsmith Maid and Lucy.....	Silver medal.
Welch pony team.....	H. Vaughan.....	Sacramento.....	.....	Silver medal.
CLASS IX—ROADSTER TEAMS.				
Best roadster team.....	R. C. Sargent.....	Lodi.....	George and Lady Washington.....	40 00 (Donated to the Society.)
Second best roadster team.....	G. W. Griffin.....	Woodland.....	Lucy and Dolly Blackstone.....	20 00
CLASS X—STANDARD BREED.				
<i>Stallions.</i>				
Best four years old and over.....	J. W. Martin.....	Yolo Station.....	Clay Duke.....	40 00
Second best four years old and over.....	F. P. Lowell.....	Sacramento.....	Fallis.....	20 00
Best three years old.....	T. C. Snider.....	Sacramento.....	Corsair.....	30 00
Second best three years old.....	G. Valensin.....	Sacramento.....	Shamrock.....	15 00
Best two years old.....	T. C. Snider.....	Sacramento.....	Creole.....	20 00
Second best two years old.....	J. A. Grove.....	Fresno.....	Daybreak.....	10 00
Best one year old.....	G. Valensin.....	Sacramento.....	George V.....	15 00
Second best one year old.....	M. W. Hicks.....	Sacramento.....	Check.....	7 50
Best under one year.....	J. A. McCloud.....	Stockton.....	Billy Vernon.....	7 50
Best team of standard yearlings.....	J. W. Martin.....	Yolo.....	.....	Special diploma.

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
<i>Mares.</i>				
Best four years old and over.....	Henry Pierce.....	San Francisco.....	Tricks.....	\$40 00
Second best four years old and over.....	W. F. Smith.....	Sacramento.....	Fansy.....	20 00
Best three years old.....	G. W. Hancock.....	Sacramento.....	Daisy.....	22 50
Best two years old.....	L. U. Shippee.....	Stockton.....	.....	20 00
Second best two years old.....	J. A. McCloud.....	Stockton.....	Carrie Vernon.....	10 00
Best one year old.....	M. W. Hicks.....	Sacramento.....	Effie.....	10 00
Second best one year old.....	W. F. Smith.....	Sacramento.....	Antonia.....	5 00
Best suckling colt.....	G. W. Hancock.....	Sacramento.....	Lady Gay.....	10 00
Second best suckling colt.....	M. W. Hicks.....	Sacramento.....	Lalla Rookh.....	5 00
CLASS XI—SADDLE HORSES.				
Best saddle horse.....	D. J. McCarty.....	San Francisco.....	Billy.....	20 00
Second best saddle horse.....	B. W. Cavanaugh.....	Sacramento.....	Cleveland.....	10 00
CLASS XII—SWEETSTAKES.				
Best stallion.....	Theodore Winters.....	Sacramento.....	Joe Hooker.....	100 00
Best mare.....	Theodore Winters.....	Sacramento.....	Marion.....	100 00
CLASS XIII—JACKS, JENNIES, AND MULES.				
Best jack four years old and over.....	Dr. H. P. Merritt.....	Woodland.....	Black Warrior.....	40 00
Second best jack four years old and over.....	W. A. Munion.....	Dixon.....	Bradley.....	20 00
Best one year old.....	Levi Carter.....	Ceres.....	Washington Eclipse.....	11 25
Best jenny four years old and over.....	W. A. Munion.....	Dixon.....	.....	22 50
Best span of mules.....	H. H. Wilson.....	Nicolaus.....	Sam and Jack.....	40 00
Second best span of mules.....	B. McKenzie.....	Nicolaus.....	Pete and Jack.....	20 00
Best two years old.....	J. P. March.....	Yolo.....	Bird.....	18 75
Best one year old.....	J. P. March.....	Yolo.....	Belle.....	15 00
Best suckling.....	James Coil.....	Sacramento.....	.....	11 25

CATTLE.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—DURHAM.				
<i>Bulls.</i>				
Best three years old and over.....	C. Younger & Son	San José.....	5th Kirklevington of F. H.	\$40 00
Second best three years old and over.....	R. M. Dunlap	Galesburg, Ill.	Oxford Duke 2d	20 00
Best two years old.....	Wilford Page	Penn's Grove	Mugwump	30 00
Second best two years old.....	P. Peterson	Sites	Counselor	15 00
Best one year old.....	Wilford Page	Penn's Grove	Patsy Carol	20 00
Second best one year old.....	C. Younger & Son	San José.....	23d Kirklevington of F. H.	10 00
Best bull calf.....	R. J. Merkle	Sacramento	Occident	15 00
Second best bull calf.....	Robert Ashburner	Badens	Baron	7 50
<i>Cows.</i>				
Best three years old and over.....	Wilford Page	Penn's Grove	Maita	40 00
Second best three years old and over.....	H. C. Moore	Visalia	Xylopa	20 00
Best two years old.....	C. Younger & Son	San José.....	Red Dolly	30 00
Second best two years old.....	C. Younger & Son	San José.....	Jessie Maynard 3d	15 00
Best one year old.....	C. Younger & Son	San José.....	Oxford Rose	20 00
Second best one year old.....	C. Younger & Son	San José.....	Jessie Maynard 4th	10 00
Best heifer calf.....	C. Younger & Son	San José.....	Oxford Belle	15 00
Second best heifer calf.....	Wilford Page	Penn's Grove	Goldnut	7 50
<i>Heid.</i>				
Best over two years old.....	C. Younger & Son	San José.....	3d Kirklevington of F. H. and four cows	40 00
Best under two years old.....	P. Peterson	Sites.....	Ben Butler and four cows	30 00
CLASS II—JERSEY AND GUERNSEY.				
<i>Bulls.</i>				
Best three years old and over.....	Henry Pierce	San Francisco	Vim of Yerba Buena	40 00
Second best three years old and over.....	W. E. Bowles	Brighton	Keystone	20 00
Best two years old.....	P. C. Anderson	Oakland	Billy Ralston	30 00
Second best two years old.....	Henry Pierce	San Francisco	Atlas of Yerba Buena	15 00
Best one year old.....	P. C. Anderson	Oakland	Prince of Oakland	20 00
Second best one year old.....	Henry Pierce	San Francisco	Sir Walter	10 00
Best bull calf.....	J. A. McIntyre	Sacramento	McIntyre	15 00
Second best bull calf.....	A. L. Nichols	Sacramento	Blackstone	7 50

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
<i>Cows.</i>				
Best three years old and over.....	Henry Pierce.....	San Francisco.....	Susan Titus.....	\$40 00
Second best three years old and over.....	W. C. Smith.....	Florin.....	Irene of Staatsburg.....	20 00
Best two years old.....	Henry Pierce.....	San Francisco.....	Alino.....	20 00
Second best two years old.....	A. L. Nichols.....	Sacramento.....	Princess of Sacramento.....	15 00
Best one year old.....	Henry Pierce.....	San Francisco.....	Polyanthus of Yerba Buena.....	20 00
Second best one year old.....	Henry Pierce.....	San Francisco.....	Bly of Yerba Buena.....	10 00
Best heifer calf.....	W. C. Smith.....	Florin.....	Martha of Florin.....	15 00
Second best heifer calf.....	Henry Pierce.....	San Francisco.....	Ethel of Yerba Buena.....	7 50
<i>Herds.</i>				
Best herd over two years old.....	Henry Pierce.....	San Francisco.....	Atlas of Y. B. and four cows.....	60 00
Second best herd under two years old.....	Henry Pierce.....	San Francisco.....	Sir Walter and four cows.....	22 50
CLASS IV—AYRESHIRE.				
<i>Bulls.</i>				
Best two years old.....	Geo. Bement & Son.....	Redwood.....	Ethelbert.....	22 50
Best one year old.....	Geo. Bement & Son.....	Redwood.....	Lord Faxon.....	15 00
Best bull calf.....	Geo. Bement & Son.....	Redwood.....	Red Mikado.....	11 25
<i>Cows.</i>				
Best three years old and over.....	Geo. Bement & Son.....	Redwood.....	Marion.....	30 00
Best two years old.....	Geo. Bement & Son.....	Redwood.....	Stelph.....	22 50
Best one year old.....	Geo. Bement & Son.....	Redwood.....	Ethel Bertha.....	15 00
Best heifer calf.....	Geo. Bement & Son.....	Redwood.....	.....	11 25
<i>Herds.</i>				
Best herd under two years old.....	Geo. Bement & Son.....	Redwood.....	Lord Faxon and four cows.....	45 00
CLASS V—HEREFORDS.				
<i>Bulls.</i>				
Best three years old and over.....	Jas. Kay, Jr.....	Lancashire, Eng.....	Novelist.....	40 00
Second best three years old and over.....	H. M. LaRue.....	Sacramento.....	Horace 30th.....	20 00
Best two years old.....	George F. Morgan.....	Cheyenne, W. T.....	Samur.....	30 00
Second best two years old.....	George F. Morgan.....	Cheyenne, W. T.....	Storm King.....	15 00
Best one year old.....	George F. Morgan.....	Cheyenne, W. T.....	Marsh.....	20 00
Second best one year old.....	Jas. Kay, Jr.....	Lancashire, Eng.....	Duke of Hereford.....	10 00

Best bull calf	George F. Morgan	Cheyenne, W. T.	Monmouth	15 00
Second best bull calf	George F. Morgan	Cheyenne, W. T.	Mahmoud	7 50
<i>Cows.</i>				
Best three years old and over	George F. Morgan	Cheyenne, W. T.	Winona	40 00
Second best three years old and over	Jas. Kay, Jr.	Lancashire, Eng.	Turtledove	20 00
Best two years old	Jas. Kay, Jr.	Lancashire, Eng.	Mormaid 3d	30 00
Second best two years old	George F. Morgan	Cheyenne, W. T.	Sylvan	15 00
Best one year old	George F. Morgan	Cheyenne, W. T.	Mabel	20 00
Second best one year old	Jas. Kay, Jr.	Lancashire, Eng.	Bounce	10 00
Best heifer calf	George F. Morgan	Cheyenne, W. T.	Lucy	15 00
Second best heifer calf	George F. Morgan	Cheyenne, W. T.	Moss Rose	7 50
<i>Herd.</i>				
Best herd of any age	Jas. Kay, Jr.	Lancashire, Eng.	Novelist and four cows	60 00
CLASS VI—HOLSTEINS.				
<i>Bulls.</i>				
Best three years old and over	Leland Stanford	Vina	Mahomet of Palo Alto	40 00
Second best three years old and over	Frank H. Burke	Menlo Park	Sedro	20 00
Best two years old	Leland Stanford	Vina	San Miguel	30 00
Second best two years old	J. H. White	Lakeville	Oro Blanco	15 00
Best one year old	J. H. White	Lakeville	Lawrin	20 00
Second best one year old	Leland Stanford	Vina	Shackleford	10 00
Best bull calf	J. H. White	Lakeville	Lomitas	15 00
Second best bull calf	Leland Stanford	Vina	Bonita Prince	7 50
<i>Cows.</i>				
Best cow three years old and over	Leland Stanford	Vina	Pansyne	40 00
Second best cow three years old and over	Frank H. Burke	Menlo Park	Sylphia	20 00
Best two years old	Leland Stanford	Vina	Aggie Alpha	30 00
Second best two years old	Leland Stanford	Vina	Georgia Truman	15 00
Best one year old	Leland Stanford	Vina	Mozenia	20 00
Second best one year old	J. H. White	Lakeville	Lasoquite	10 00
Best heifer calf	J. H. White	Lakeville	Bumblebee	15 00
Second best heifer calf	Leland Stanford	Vina	Mahomet Lass	7 50
<i>Herd.</i>				
Best herd of any age	Leland Stanford	Vina	Mahomet of Palo Alto and four cows	Silver pitcher.
CLASS VIII—GRADED CATTLE.				
<i>Cows.</i>				
Best cow three years old and over	Robert Ashburner	Baden Station	Music	30 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best cow two years old.....	Wm. Tryon.....	Sacramento.....	Daisy.....	\$10 00
Best cow one year old.....	Robert Ashburner.....	Baden Station.....	Peach Blossom.....	5 00
Best heifer calf.....	Leland Stanford.....	Vina.....	Lulu.....	5 00
CLASS IX—SWEETSTAKES.				
Best bull of any age or breed.....	C. Younger & Son.....	San José.....	31 Kirklevington of Forest Home (Durham).....	100 00
Best cow of any age or breed.....	Wilford Page.....	Penn's Grove.....	Maita (Durham).....	100 00
Best bull and three of his calves under one year old.....	P. Peterson.....	Sites.....	(counselor and three calves (all Durham).....	100 00
CLASS X—HERD SWEETSTAKES.				
<i>Beef Breed.</i>				
Best herd.....	Wilford Page.....	Penn's Grove.....	Mugwump and four cows (Durham).....	100 00
<i>Milk Breed.</i>				
Best herd.....	Leland Stanford.....	Vina.....	San Miguel and four cows (Holstein).....	100 00
CLASS XI—MILCH COWS.				
Best milch cow of any age or breed.....	Leland Stanford.....	Vina.....	Pietje Piersma (Holstein). Record: Seven days' milking 279 lbs. 12 oz of milk.....	30 00
Second best milch cow of any age or breed.....	F. H. Burke.....	Menlo Park.....	Sylpha (Holstein). Record: Seven days' milking 236 lbs. 15 oz. of milk.....	20 00

SHEEP.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—SPANISH MERINOS.				
Best ram two years old and over.....	F. Bullard.....	Woodland.....	King George.....	\$30 00
Second best ram two years old and over.....	Kirkpatrick & Whitaker.....	Knight's Ferry.....	Lott.....	15 00
Best ram one year old and under two.....	F. Bullard.....	Woodland.....	Gladstone.....	16 85
Best three ram lambs.....	F. Bullard.....	Woodland.....		16 85

Best pen of five ewes, two years old and over.....	F. Bullard.....	Woodland.....	16 85
Best pen of five ewes, one year old and under two.....	F. Bullard.....	Woodland.....	16 85
Best pen of five ewe lambs.....	F. Bullard.....	Woodland.....	16 85
Best ram and five of his lambs.....	F. Bullard.....	King George and five lambs.....	22 50
CLASS II.—FRENCH MERINOS.			
Best ram two years old and over.....	James Roberts.....	Irvington.....	22 50
Best ram one year old and under two.....	James Roberts.....	Irvington.....	16 85
Best three ram lambs.....	James Roberts.....	Irvington.....	16 85
Best pen of five ewes, two years old and over.....	James Roberts.....	Irvington.....	16 85
Best pen of five ewes, one year old and under two.....	James Roberts.....	Irvington.....	16 85
Best pen of five ewe lambs.....	James Roberts.....	Irvington.....	16 85
Best ram and five of his lambs.....	James Roberts.....	Bulger and five lambs.....	22 50
CLASS III.—SOUTHDOWNS.			
Best ram of any age.....	Geo. Bement & Son.....	Redwood.....	15 00
Best pen of ewes.....	Geo. Bement & Son.....	Redwood.....	15 00
Best ram and five lambs.....	Geo. Bement & Son.....	Redwood.....	15 00
CLASS IV.—COTSWOLDS.			
Best ram of any age.....	C. Younger & Son.....	San José.....	20 00
Second best ram of any age.....	Frank H. Burke.....	Menlo Park.....	10 00
Best pen of five ewes.....	C. Younger & Son.....	San José.....	15 00
Best ram and five lambs.....	C. Younger & Son.....	San José.....	15 00
CLASS V.—SHROPSHIRE.			
Best ram of any age.....	Andrew Smith.....	Redwood.....	20 00
Second best ram of any age.....	J. H. Glide.....	Sacramento.....	10 00
Best pen of five ewes.....	Andrew Smith.....	Redwood.....	15 00
Best ram and five lambs.....	Andrew Smith.....	Redwood.....	15 00
SWEETSTAKES.			
Best ram of any age or breed and five lambs.....	Jas. Roberts.....	Irvington.....	50 00
ANGORA GOATS.			
<i>Thoroughbred.</i>			
Best buck two years old and over.....	J. H. Harlan.....	Williams.....	25 00
Second best buck two years old and over.....	Julius Weyand.....	Colusa.....	12 50
Best buck under two years old.....	Julius Weyand.....	Williams.....	15 00
Second best buck under two years old.....	J. H. Harlan.....	Williams.....	7 50
Best pen of not less than three does, two years old and over.....	J. H. Harlan.....	Williams.....	25 00
Second best pen of not less than three does, two years old and over.....	Julius Weyand.....	Colusa.....	12 50

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of owner.	P. O. Address.	Name of Animal.	Award.
Best pen of not less than three does, under two years old	Julius Weyand	Colusa		\$15 00
Second best pen of not less than three does, under two years old	J. H. Harlan	Williams		7 50
Best pen of three does, under two years old	J. H. Harlan	Williams		7 50
<i>Graded.</i>				
Best pen of three does, under two years old	J. H. Harlan	Williams		5 00
<i>Herd.</i>				
Best herd of not less than ten, any age or breed	Julius Weyand	Colusa		30 00
Second best herd of not less than ten, any age or breed.	J. H. Harlan	Williams		15 00

SWINE.

LIVE STOCK.	Name of owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—BERKSHIRE.				
Best boar two years old and over	Andrew Smith	Redwood	Redwood Duke	\$15 00
Best boar one year old and under two	Andrew Smith	Redwood	Falkland	15 00
Second best boar one year old and under two	Thomas Waite	Perkins	William Corbett	7 50
Best boar six months old and under one year	Andrew Smith	Redwood	Redwood Duke 4th	7 50
Best breeding sow two years old and over	Andrew Smith	Redwood	Redwood Sallie	15 00
Best sow one year old and under two	Andrew Smith	Redwood	Redwood Sallie 2d	15 00
Second best sow one year old and under two	Thomas Waite	Perkins	Lady Smith	7 50
Best sow six months old and under one year	Andrew Smith	Redwood	Redwood Sallie 3d and six pigs	7 50
Best sow and six pigs under three months old	Andrew Smith	Redwood	Redwood Princess and six pigs	15 00
Best pair of pigs under six months old	Andrew Smith	Redwood	Dandy and Beauty	11 25
CLASS II—ESSEX.				
Best boar one year old and under two years	Geo. Bement & Son	Redwood	Tyler	14 25
Best breeding sow two years old	Geo. Bement & Son	Redwood	Josie	15 00
Best sow six months old and under one year	Geo. Bement & Son	Redwood	Peggy	7 50
CLASS III—POLAND-CHINA.				
Best breeding sow two years old and over	Jos. Melvin	Davisville	Bertha's Best	15 00

POULTRY.

Best sow one year old and under two	Jos. Melvin	Davisville	Bessie	11 25
Best pair of pigs under six months old	Jos. Melvin	Davisville	King and Lady	11 25
SWEETSTAKES.				
Best boar of any age or breed	Andrew Smith	Redwood	Redwood Duke (Berkshire)	30 00
Best sow of any age or breed	Jos. Melvin	Davisville	Bertha's Best (Poland-China)	30 00
Best pen of six pigs under six months old	Jos. Melvin	Davisville	Poland-China	20 00
Best family, all of same breed, consisting of one boar, two sows, and six pigs	Andrew Smith	Redwood	Redwood Duke, two sows, and six pigs (Berkshire)	18 75
POULTRY.				
LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
LIGHT BRAHMAS.				
Best cock and hen	M. W. Parker	Biggs		\$3 00
Best cockerel and pullet	M. W. Parker	Biggs		3 00
Best breeding pen of one male and four females	M. W. Parker	Biggs		7 50
DARK BRAHMAS.				
Best cock and hen	Thomas Waite	Perkins		3 00
Best cockerel and pullet	Thomas Waite	Perkins		3 00
Best breeding pen of one male and four females	Thomas Waite	Perkins		7 50
LANGSHANS.				
Best cock and hen	Thomas Waite	Perkins		3 00
Best cockerel and pullet	Thomas Waite	Perkins		3 00
Best breeding pen of one male and four females	Samuel Katzenstein	Sacramento		10 00
BUFF COCHINS.				
Best cock and hen	M. W. Parker	Biggs		3 00
Best cockerel and pullet	M. W. Parker	Biggs		3 00
Best breeding pen of one male and four females	M. W. Parker	Biggs		7 50
PARTRIDGE COCHINS.				
Best cock and hen	M. W. Parker	Biggs		3 00
Best cockerel and pullet	M. W. Parker	Biggs		3 00
Best breeding pen of one male and four females	M. W. Parker	Biggs		7 50
PLYMOUTH ROCKS.				
Best cock and hen	Thomas Waite	Perkins		3 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best cockerel and pullet. Best breeding pen of one male and four females.	Thomas Waite. Thomas Waite.	Perkins Perkins	..... .....	\$3 00 7 50
BROWN LEGHORNS.				
Best cock and hen Best cockerel and pullet Best breeding pen of one male and four females.	A. L. Nichols. Thomas Waite. A. L. Nichols	Sacramento. Perkins Sacramento.	..... ..... .....	3 00 3 00 7 50
WHITE LEGHORNS.				
Best cock and hen Best cockerel and pullet Best breeding pen of one male and four females.	A. L. Nichols. A. L. Nichols Thomas Waite.	Sacramento Sacramento Perkins	..... ..... .....	3 00 3 00 10 00
WHITE-FACED BLACK SPANISH.				
Best cock and hen Best cockerel and pullet Best breeding pen of one male and four females.	E. I. Robinson. E. I. Robinson E. I. Robinson.	Sacramento. Sacramento Sacramento.	..... ..... .....	3 00 3 00 7 50
SILVER-SPANGLED HAMBURGS.				
Best cock and hen Best cockerel and pullet Best breeding pen of one male and four females.	Thomas Waite. Thomas Waite. Thomas Waite.	Perkins Perkins Perkins	..... ..... .....	3 00 3 00 7 50
POLISH.				
Best cock and hen Best cockerel and pullet	Thomas Waite. Thomas Waite.	Perkins Perkins	..... .....	3 00 3 00
WYANDOTTES.				
Best cock and hen Best cockerel and pullet Best breeding pen of one male and four females.	Thomas Waite. Thomas Waite. Thomas Waite.	Perkins Perkins Perkins	..... ..... .....	3 00 3 00 10 00
BANTAMS.				
Best cock and hen	Samuel Katzenstein	Sacramento.	.....	3 00
PIT GAMES.				
Best cock and hen. Best breeding pen of one male and four females.	W. F. Smith. M. W. Parker.	Sacramento Biggs	..... .....	3 00 5 00

TURKEYS.			
Best pair Bronze turkeys.....	Thomas Waite.....	Perkins.....	7 50
TOULOUSE GESE.			
Best pair	Thomas Waite.....	Brighton.....	5 00
ROUEN DUCKS.			
Best pair	Thomas Waite.....	Brighton.....	5 00
PEKIN DUCKS.			
Best pair	Thomas Waite.....	Perkins.....	5 00
Second best pair	Frank H. Burke.....	Menlo Park.....	3 00

SECOND DEPARTMENT.

MACHINERY, IMPLEMENTS, ETC.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Stanton, Thomson & Co.....	Sacramento.....	Best well pump.....	\$10 00
Root, Neilson & Co.....	Sacramento.....	Apparatus for raising water for irrigating purposes.....	\$20 00
Wm. Gutenberger.....	Sacramento.....	Model quartz crusher.....	Honorable mention.
San Francisco Tool Company.....	San Francisco.....	Best steam engine, California manufacture.....	\$30 00
California Fence Company.....	San Francisco.....	Machine for manufacturing field or garden fence.....	\$20 00
CLASS II.			
A. & A. Heilbron.....	Sacramento.....	Hand corn sheller.....	Diploma.
A. & A. Heilbron.....	Sacramento.....	Lawn mower.....	Diploma.
Stanton, Thomson & Co.....	Sacramento.....	Cider mill and press.....	Diploma.
S. C. H. Agricultural Works.....	Stockton.....	Lightning hay press.....	\$20 00
Benicia Agricultural Works.....	Benicia.....	Best display of agricultural machinery by any one house.....	\$50 00
Baker & Hamilton.....	Sacramento.....	Best thrashing machine.....	\$30 00
Baker & Hamilton.....	Sacramento.....	Best horse hay rake.....	\$5 00
Baker & Hamilton.....	Sacramento.....	Best power corn sheller.....	Diploma.
G. G. Wickson.....	San Francisco.....	Hay and straw cutter.....	Diploma.

SECOND DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS III.			
A. & A. Heilbron	Sacramento.	Best display of reaping and mowing machine knives	\$5 00
A. & A. Heilbron	Sacramento.	Self-binding harvester	\$20 00
A. & A. Heilbron	Sacramento.	Horse hoe	Diploma
A. & A. Heilbron	Sacramento.	Double shovel plow	Diploma
Stanton, Thomson & Co.	Sacramento.	Best wheat drill	\$10 00
Stanton, Thomson & Co.	Sacramento.	Best grain broadcast sowing machine	\$10 00
Stanton, Thomson & Co.	Sacramento.	Best hay pitching machine	\$10 00
Benicia Agricultural Works	Benicia	Best header, California manufacture.	\$40 00
Baker & Hamilton	Sacramento.	Best mowing machine	\$10 00
Baker & Hamilton	Sacramento.	Best combined reaper and mower	\$10 00
Baker & Hamilton	Sacramento.	Best potato planter	\$5 00
Baker & Hamilton	Benicia	Best harrow	\$10 00
Benicia Agricultural Works	Sacramento.	Best field roller and crusher	\$10 00
Wm. Gutenberger	Sacramento.		
CLASS IV.			
W. B. Wilshire & Co.	San Francisco	Best platform scales (Buffalo)	Diploma.
W. B. Wilshire & Co.	San Francisco	Best stock of scales for general purposes (Buffalo)	Diploma.
W. E. Mauldin	Sacramento	Best farm gate	\$10 00
Pacific Manufacturing Company	Sacramento	Best windmill	\$25 00
S. C. H. Agricultural Works	Stockton.	Best grain cleaner (independent)	\$10 00
Baker & Hamilton	Sacramento	Best grain cleaning attachment for thrasher	\$10 00
J. H. Ritchy	Redwood City	Model farm gate	Special premium rec.
John Klees	Sacramento.	Best fanning mill	\$5 00
G. G. Wickson & Co.	San Francisco	Best farm feed mill	\$10 00
CLASS V.			
H. S. Jory	Stockton.	Best fruit drier	\$20 00
Childs & Deney	Acampo	Farm road scraper	Special premium rec.
A. & A. Heilbron	Sacramento.	Best display of haying and harvesting tools	\$10 00
Stanton, Thomson & Co.	Sacramento.	Best farm road scraper	\$5 00
Baker & Hamilton	Sacramento.	Best garden seed drill	\$2 00
E. W. Melvin	Sacramento.	Best washing machine (New Becker)	\$5 00
E. W. Melvin	Sacramento.	Best clothes wringer (Empire)	Diploma.
A. S. Hopkins & Bro.	Sacramento.	Best clothes-horse	Diploma.
Huntington, Hopkins & Co.	Sacramento.	Best cabbage cutter	\$2 00
Huntington, Hopkins & Co.	Sacramento.	Best sausage meat cutter and stuffer	\$2 00
Huntington, Hopkins & Co.	Sacramento.	Best pruning shears	\$2 50
G. G. Wickson	San Francisco	Best churn (Stoddard)	\$5 00

San Francisco	San Francisco	Best butter worker	Diploma.
G. G. Wickson	G. G. Wickson	Best cheese vat, with heater attachment	\$10 00
CLASS VI.			
J. H. Kendrick	Willows	Gang plow	Premium recommend'd.
Jas. & Wm. Paterson	Stockton	Steam plow, California manufacture	\$100 00
A. & A. Heilbron	Sacramento	Best sulky plow	\$10 00
A. & A. Heilbron	Sacramento	Best sod plow	\$5 00
A. & A. Heilbron	Sacramento	Best steel plow	\$5 00
A. & A. Heilbron	Sacramento	Best cast-iron plow	\$5 00
A. & A. Heilbron	Sacramento	Best one-horse plow	\$5 00
Stanton, Thomson & Co.	Sacramento	Best dynamometer	\$5 00
Benicia Agricultural Works	Benicia	Best gang plow	\$25 00
Baker & Hamilton	Sacramento	Best stubble plow	\$5 00
Baker & Hamilton	Sacramento	Best subsoil plow	\$5 00
Benicia Agricultural Works	Benicia	Best vineyard plow	\$5 00
Benicia Agricultural Works	Benicia	Best side-hill plow	\$5 00
Benicia Agricultural Works	Benicia	Best chilled plow	\$5 00
Benicia Agricultural Works	Benicia	Best plow for all purposes	\$5 00
CLASS VII.			
Chas. Ott	Sacramento	Best spring market wagon	\$10 00
Studebaker Bros.	Sacramento	Best pleasure cart	\$10 00
Studebaker Bros.	Sacramento	Best breaking cart	\$10 00
Studebaker Bros.	Sacramento	Best farm wagon for general purposes	\$20 00
A. Meister	Sacramento	Best open family carriage	Diploma and \$25 00
A. Meister	Sacramento	Best top buggy	Diploma and \$15 00
A. Meister	Sacramento	Best open buggy	\$10 00
A. Meister	Sacramento	Two-seated open wagon	\$15 00
Wm. D. O'Kane	San Francisco	Best track sulky	\$5 00
J. F. Hill	Sacramento	Best trotting wagon	\$10 00
J. F. Hill	Sacramento	Best business wagon	\$10 00
J. F. Hill	Sacramento	Best wagon or carriage brake	Diploma
J. F. Hill	Sacramento	Best display of wheels, hubs, etc.	Diploma
J. F. Hill	Sacramento	Best ladies' phaeton	\$10 00
M. Miller	Sacramento	Best closed family carriage	Diploma and \$25 00
Studebaker Bros.	Sacramento	Best fruit wagon	Silver medal.

THIRD DEPARTMENT.

TEXTILE FABRICS.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Carlson & Currier.....	San Francisco.....	Display of silks, hosiery, American manufacture.....	Silver medal.
California Cotton Mills.....	East Oakland.....	Tens yards cloth of flax cotton.....	\$5 00
Mrs. N. B. Vivian.....	Sacramento.....	Best knitted shawl.....	\$5 00
D. H. Quinn.....	Sacramento.....	Best silk hat.....	\$5 00
Weinstock & Lubin.....	Sacramento.....	Best soft hat.....	\$5 00
Mrs. M. H. Ober.....	Sacramento.....	Best shirts.....	Silver medal.
Weinstock & Lubin.....	San Francisco.....	Best shoulder braces and corsets.....	Silver medal.
McKim & Orth.....	Sacramento.....	Best display of dry goods.....	\$20 00
		Best display of fancy goods.....	\$20 00
CLASS II.			
Mrs. A. Schirmer.....	Sacramento.....	Best display of children's clothing.....	\$15 00
Mrs. A. Schirmer.....	Sacramento.....	Best display of embroidered children's clothing.....	\$5 00
Mrs. A. Schirmer.....	Sacramento.....	Best carriage afghan.....	\$5 00
Mrs. A. Schirmer.....	Sacramento.....	Best patchwork quilt (silk).....	\$5 00
Mrs. A. Schirmer.....	Sacramento.....	Best embroidered lady's dress.....	\$5 00
Mrs. A. Schirmer.....	Sacramento.....	Best display of hand knit underwear.....	\$5 00
Flora C. Kendall.....	Oakland.....	Best porcelain painting.....	\$5 00
Misses Brothers.....	Sacramento.....	Best velvet bonnet.....	\$5 00
Misses Brothers.....	Sacramento.....	Best display of millinery.....	\$20 00
Misses Brothers.....	Sacramento.....	Best velvet hat.....	\$5 00
Misses Brothers.....	Sacramento.....	Best silk bonnet.....	\$5 00
Misses Brothers.....	Sacramento.....	Best display of feathers.....	\$5 00
Misses Brothers.....	Sacramento.....	Best variety of artificial flowers.....	\$10 00
Mrs. J. Storch.....	Sacramento.....	Best embroidered sofa pillow.....	\$5 00
Mrs. T. G. Clark.....	Sacramento.....	Best knit quilts and pair pillow shams.....	\$5 00
Mrs. J. Storch.....	Sacramento.....	Best embroidered lambequin.....	\$5 00
Mrs. Wm. Hoese.....	San Francisco.....	Best display of Spanish drawn work.....	\$5 00
Miss Minnie Heisen.....	Sacramento.....	Best embroidered table scarf (two ends).....	\$3 00
Miss Minnie Heisen.....	Sacramento.....	Best plain silk ribbon work.....	\$3 00
Mrs. A. Gotthold.....	Sacramento.....	Best display of shell work.....	\$3 00
Mrs. N. Wilcox.....	Sacramento.....	Best embroidered bedspread.....	\$5 00
Miss Mary Pringle.....	Sacramento.....	Best embroidered table cover (four ends).....	\$5 00
Miss Mary Pringle.....	Sacramento.....	Best Turkish embroidery.....	\$3 00

Miss Mary Pringle.....	Sacramento.	Best Kensington embroidery.....	\$3 00
Miss Mary Pringle.....	Sacramento.	Best bead work.....	\$5 00
Miss Mary Pringle.....	Sacramento.	Best hammered brass.....	\$5 00
Miss Mary Pringle.....	Sacramento.	Best plush ribbon work.....	\$3 00
Mrs. N. B. Vivian.....	Sacramento.	Best display of moss or lichens.....	\$3 00
Mrs. N. B. Vivian.....	Sacramento.	Best display of ornamental grasses.....	\$3 00
Miss Lillie Blue.....	Sacramento.	Best display of decorative painting on plush, silk, bolting cloth, etc.	\$10 00
Miss Lillie Blue.....	Sacramento.	Best Kensington painting (banner).....	\$5 00
Miss Lillie Blue.....	Sacramento.	Best surface painting (plush portiere).....	\$3 00
Miss Lillie Blue.....	Sacramento.	Best embroidered ottoman cover.....	\$3 00
Mrs. C. A. Young.....	Sacramento.	Best crocheted shawl.....	\$3 00
Phebe C. Brown.....	Sacramento.	Best embroidered lady's dress (Spanish work).....	\$10 00
Phebe C. Brown.....	Sacramento.	Best embroidered wall banner.....	\$3 00
Mrs. George Muddox.....	Sacramento.	Best darned net set.....	\$3 00
Mrs. George Taylor.....	Sacramento.	Best crochet quilt.....	\$5 00
Mrs. George Taylor.....	Sacramento.	Best embroidered chair seat.....	\$3 00
Miss May Quinn.....	Sacramento.	Best silk embroidery on flannel.....	\$5 00
Mrs. Dana Perkins.....	Rocklin.....	Best embroidered chenille, gilt frame.....	\$5 00
Mrs. P. S. Lawson.....	Sacramento.	Best embroidered outline.....	\$3 00
White Sewing Machine Co.....	San Francisco	Best applique work.....	\$3 00
Mrs. J. J. Paulsell.....	Sacramento.	Best child's afghan.....	\$3 00
Mrs. M. M. Fewel.....	Sacramento.	Best display of machine embroidery.....	Diploma.
Mrs. Addie Carter.....	Sacramento.	Best braiding by hand.....	\$5 00
Mrs. George Taylor.....	Sacramento.	Best embroidery in arasene.....	\$5 00
S. M. Grimes.....	Sacramento.	Best skeleton leaves.....	\$2 00
Mrs. J. Storch.....	Sacramento.	Best wax flowers.....	\$2 00
Mrs. J. Storch.....	Sacramento.	Best embroidered handkerchief.....	\$3 00
Mrs. J. Storch.....	Sacramento.	Best specimen of wood carving (ship).....	\$5 00
Miss Mary Pringle.....	Sacramento.	Best embroidered toilet set.....	\$10 00
Miss Lillie Blue.....	Sacramento.	Best embroidered pillow shams.....	\$5 00
		Plain silk ribbon work.....	\$3 00
		Handsomest, best, and largest display of fancy articles, made by any lady or miss.....	\$20 00
Miss Lillie Blue.....	Sacramento.	Best surface-painted lambrequin.....	\$5 00
Mrs. M. H. Ober.....	San Francisco	Fine lace work, hand made.....	\$5 00
D. H. Enmons.....	Sacramento.	Chenille embroidery (special).....	\$5 00
Miss Alice Felter.....	Sacramento.	Embroidered fire screen.....	\$5 00
<i>Juvenile Department.</i>			
Florentine Prentice.....	San Francisco	Crochet work.....	Napkin ring.
Edwin C. Clark.....	Sacramento.	Knit work.....	Napkin ring.
Maud E. Guthrie.....	Sacramento.	Crochet afghan.....	Napkin ring.
Elsie Kelly.....	Sacramento.	Silk quilt.....	\$5 00
Agnes M. Hopper.....	Sacramento.	Calico dress by a miss ten years old.....	\$5 00

THIRD DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS III.—PRINTING, ETC.			
Van Horn, Mather & Frost.....	San Francisco	Collection of maps, globes, etc., Yaggi's anatomical study.....	Silver medal.

FOURTH DEPARTMENT.

MECHANICAL PRODUCTS.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Leak Glove Manufacturing Co.	San Francisco	Best display of leather gloves and mittens	Silver medal.
Wm. D. O'Kane.....	San Francisco	Best set of single harness.....	\$10 00
R. W. Neely, Jr.....	Sacramento	Best pair of dress boots.....	\$5 00
R. W. Neely, Jr.....	Sacramento	Best pair of heavy boots.....	\$5 00
R. W. Neely, Jr.....	Sacramento	Best pair of gentlemen's dress shoes.....	\$5 00
R. W. Neely, Jr.....	Sacramento	Best pair of congress gaiters.....	\$5 00
R. W. Neely, Jr.....	Sacramento	Best pair of booties.....	\$5 00
R. W. Neely, Jr.....	Sacramento	Best display of men's and boys' boots and shoes, and gaiters.....	Silver medal.
J. G. Davis.....	Sacramento	Best exhibit of carpets and rugs.....	\$20 00
Van Voorhies & Co.....	Sacramento	Best display of saddletrees.....	Diploma.
Kullman & Wagner.....	Stockton	Best display of leather.....	Silver medal.
California Cotton Mills Co.	East Oakland	Best display of cordage (cotton).....	Silver medal.
CLASS II.			
W. B. Wilson & Co.....	San Francisco	Best burglar and fireproof safe.....	Silver medal.
Holbrook, Merrill & Stetson	Sacramento	Best display of copper work.....	\$10 00
Holbrook, Merrill & Stetson	Sacramento	Best display of brass work.....	\$10 00
Holbrook, Merrill & Stetson	Sacramento	Best display of tinware.....	Silver medal.
Holbrook, Merrill & Stetson	Sacramento	Best display of kitchen utensils, of tin.....	\$5 00
Holbrook, Merrill & Stetson	Sacramento	Best exhibition of lead pipe.....	Diploma.
Holbrook, Merrill & Stetson	Sacramento	Best milk cans.....	Diploma.

Conrad Zwickel.....	Sacramento.....	Best iron fence, including post.....	\$10 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of modern building hardware.....	\$20 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of general hardware.....	\$20 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of iron and steel.....	\$10 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of mechanics' tools.....	\$20 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of pocket cutlery.....	\$5 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of circular saws.....	\$5 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of files.....	\$5 00
Huntington, Hopkins & Co.....	Sacramento.....	Best pruning shears.....	\$5 00
Huntington, Hopkins & Co.....	Sacramento.....	Best pruning knives.....	\$5 00
Huntington, Hopkins & Co.....	Sacramento.....	Best display of wire goods.....	Diploma and \$5 00
CLASS III.			
Holbrook, Merrill & Stetson.....	Sacramento.....	Specimens of marbleized iron.....	\$3 00
Holbrook, Merrill & Stetson.....	Sacramento.....	Best display of iron hollow ware.....	\$5 00
Holbrook, Merrill & Stetson.....	Sacramento.....	Best farmers' cauldrons.....	\$5 00
Holbrook, Merrill & Stetson.....	Sacramento.....	Best portable range.....	\$5 00
Holbrook, Merrill & Stetson.....	Sacramento.....	Best laundry stove.....	\$5 00
Holbrook, Merrill & Stetson.....	Sacramento.....	Best assortment of japanned ware.....	\$10 00
John F. Myers.....	San Francisco.....	Best oil and gasoline stoves.....	\$5 00
L. L. Lewis & Co.....	Sacramento.....	Best cooking stove, for wood.....	\$5 00
L. L. Lewis & Co.....	Sacramento.....	Best cooking stove, for coal.....	\$5 00
L. L. Lewis & Co.....	Sacramento.....	Best parlor stove.....	\$5 00
L. L. Lewis & Co.....	Sacramento.....	Best warming furnace.....	\$5 00
L. L. Lewis & Co.....	Sacramento.....	Best cooking range.....	\$10 00
L. L. Lewis & Co.....	Sacramento.....	Best specimens of marbleized stone.....	\$5 00
CLASS IV.			
J. E. Genuing.....	Sacramento.....	Pipe organ made in California.....	\$20 and special premium of \$25 00
M. L. Hammer.....	Sacramento.....	Best stringed or reed instruments made in California.....	Silver medal and \$20 00
John F. Cooper.....	Sacramento.....	Best upright piano.....	\$20 00
CLASS V.			
Pacific Spring and Mattress Co.....	San Francisco.....	Best wool mattress.....	\$5 00
Pacific Spring and Mattress Co.....	San Francisco.....	Best writing desk.....	\$5 00
B. F. Farrar.....	San Francisco.....	Best hair mattress.....	\$5 00
B. F. Farrar.....	San Francisco.....	Best lounge.....	\$5 00
Capital Furniture Company.....	Sacramento.....	Best school furniture.....	\$10 00
Capital Furniture Company.....	Sacramento.....	Best bookcase.....	\$5 00
J. G. Davis.....	Sacramento.....	Best extension table.....	\$5 00
J. G. Davis.....	Sacramento.....	Best center table.....	\$5 00
J. G. Davis.....	Sacramento.....	Best sick chair or couch.....	\$5 00
J. G. Davis.....	Sacramento.....	Best spring mattress.....	\$5 00
Truman S. Clark & Son.....	San Francisco.....	Best display of iron furniture.....	\$10 00

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
W. D. Comstock	Sacramento	Best set of parlor furniture	\$20 00
W. D. Comstock	Sacramento	Best parlor chairs	\$10 00
John Breuner	Sacramento	Best dressing bureau	\$10 00
John Breuner	Sacramento	Best sofa	\$10 00
John Breuner	Sacramento	Best office chair	\$5 00
John Breuner	Sacramento	Best pair of side tables	\$5 00
John Breuner	Sacramento	Best display of furniture	\$20 00
John Breuner	Sacramento	Best set of bedroom furniture	\$10 00
John Breuner	Sacramento	Best display of upholstery	\$10 00
John Breuner	Sacramento	Best office desk	\$5 00
John Breuner	Sacramento	Best display of willow furniture	\$10 00
Jacob Strahle & Co.	San Francisco	Best billiard table	Silver medal and \$10 00
Capital Furniture Co.	Sacramento	Best wardrobe	\$10 00
Humboldt County exhibit	Eureka	Best display of California woods	Silver medal.
CLASS VI.			
A. S. Hopkins & Bro.	Sacramento	Best display of cedarware	\$5 00
A. S. Hopkins & Bro.	Sacramento	Best display of pinware	\$5 00
A. S. Hopkins & Bro.	Sacramento	Best display of oakware	\$5 00
A. S. Hopkins & Bro.	Sacramento	Best display of willowware	\$10 00
A. S. Hopkins & Bro.	Sacramento	Best display of splitwood baskets	\$3 00
A. S. Hopkins & Bro.	Sacramento	Best display of osier	\$5 00
A. S. Hopkins & Bro.	Sacramento	Best display of woodenware	\$25 00
A. S. Hopkins & Bro.	Sacramento	Best exhibition of broom corn, brooms, and brushes.	\$10 00
A. S. Hopkins & Bro.	Sacramento	Best assortment of coopers' ware	\$10 00
Theo. W. Schwamb	Sacramento	Best gilt frames	\$5 00
Theo. W. Schwamb	Sacramento	Best twist moldings	\$5 00
Mrs. C. A. Young	Sacramento	Best display of fancy moldings and scroll sawing	\$5 00
CLASS VII.			
I. X. L. Elastic Truss Co.	San Francisco	Best truss	Silver medal.
Pacific Optical Institute	Sacramento	Best assortment of spectacles and eye-glasses, different styles, shapes of frames and nose-pieces	Silver medal.
Pacific Optical Institute	Sacramento	Best assortment of all kinds of finished convex, concave, cylindrical, and plain lenses	\$5 00
Pacific Optical Institute	Sacramento	Best assortment of all kinds of unfinished convex, concave, cylindrical, and plain lenses	Diploma.
Daw Kerrell & Bayley	San Francisco	Display of blacking	Diploma.

Capital Soap Co.	Sacramento.	Best display of all kinds of soap.	Special gold medal.
Weber & Co.	Sacramento.	Best yeast powder (Capital Baking Powder)	Diploma.
John M. Connor.	San Francisco.	Best stove polish.	Diploma.
A. S. Hopkins & Bro.	Sacramento.	Best display of writing fluid.	\$2 00
A. S. Hopkins & Bro.	Sacramento.	Best display of axle grease.	Diploma.
Mrs. H. Works & Co.	Oakland.	Best hair restorer.	Diploma.
CLASS IX.			
George Muddox.	Sacramento.	Water pipe from water line.	Diploma.
George Muddox.	Sacramento.	Best sample of drain tile.	\$5 00
George Muddox.	Sacramento.	Best roofing tile.	\$5 00
George Muddox.	Sacramento.	Best flooring tile.	\$5 00
George Muddox.	Sacramento.	Best terra cotta.	Diploma.
George Muddox.	Sacramento.	Best firebricks.	\$3 00
George Muddox.	Sacramento.	Best pottery, various kinds.	Silver medal.
George Muddox.	Sacramento.	Best display of stoneware.	\$10 00
Whittier, Fuller & Co.	Sacramento.	Best sample of stained glass.	\$5 00
Whittier, Fuller & Co.	Sacramento.	Best sample of ground and cut glass.	\$5 00
CLASS X.			
Mrs. Z. P. Brandon.	Latrobe.	Suit of animal kingdom, etc.	Silver medal.
Mrs. Z. P. Brandon.	Latrobe.	Collection representing the ornithology of California	Silver medal.
CLASS XI.			
Inyo Marble Co. of California.	Sacramento.	Best collection of polished marble work.	\$30 00

FIFTH DEPARTMENT.

GRAIN, VEGETABLES, DAIRY PRODUCTS, FLOWERS, ETC.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Carlson & Currier.	San Francisco.	Best general display of silks made in California.	\$25 00
Carlson & Currier.	San Francisco.	Best display of thrown and twisted silk, in the gum and boiled off—made in California.	\$10 00
Carlson & Currier.	San Francisco.	Best display of machine spool silk made in California.	\$10 00
Carlson & Currier.	San Francisco.	Best display of knitting silk made in California.	\$5 00

FIFTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
Carlson & Currier	San Francisco	Best display of spool embroidery made in California	\$5 00
Carlson & Currier	San Francisco	Best display of skein embroidery made in California	\$5 00
CLASS II.			
C. McCreary & Co.	Sacramento	Best sample of bakers' flour	\$20 00
C. McCreary & Co.	Sacramento	Whitest sample of family flour	\$20 00
Mrs. R. S. Lockett	Perkins	Best exhibit of garden seeds—California production	\$10 00
B. N. Bugbey	Sacramento	Best bushel of yellow corn	\$5 00
B. N. Bugbey	Sacramento	Best sample of proper wheat	\$10 00
B. N. Bugbey	Sacramento	Best sample of barley	\$5 00
John Reith	Union House	Best sample of Australian wheat	\$10 00
J. D. Huffman	Lodi	Best display of grain in the sheaf	\$40 00
J. B. Welby	Sacramento	Second best display of grain in the sheaf	\$20 00
CLASS III.			
Isaac Lea	Florin	Best display of licorice root	\$5 00
P. M. Artz	Perkins	Best half peck of pole beans	\$2 00
Mrs. R. S. Lockett	Perkins	Best six long blood beets	\$3 00
Mrs. R. S. Lockett	Perkins	Best six sugar beets	\$3 00
Mrs. R. S. Lockett	Perkins	Best six crocknecked squash	\$3 00
George Muddox	Sacramento	Best six cucumbers	\$2 00
Mrs. R. S. Lockett	Perkins	Best three cantaloupes	\$3 00
Mrs. R. S. Lockett	Perkins	Best half peck of gherkin cucumbers	\$3 00
B. N. Bugbey	Sacramento	Best half peck of sweet potatoes	\$3 00
B. N. Bugbey	Sacramento	Best half peck of red onions	\$3 00
B. N. Bugbey	Sacramento	Best half bushel of white potatoes	\$5 00
B. N. Bugbey	Sacramento	Best six Hubbard squashes	\$3 00
B. N. Bugbey	Sacramento	Best and largest pumpkin	\$3 00
E. F. Aiken	Sacramento	Best peck of tomatoes	\$3 00
E. F. Aiken	Sacramento	Best six marrow squashes	\$3 00
E. F. Aiken	Sacramento	Best half peck peppers for pickling	\$3 00
E. F. Aiken	Sacramento	Best three watermelons	\$3 00
Felice Gabrielli	Brighton	Best half bushel of red potatoes	\$5 00
Felice Gabrielli	Brighton	Greatest variety of Irish potatoes	\$5 00
Felice Gabrielli	Brighton	Best twelve parsnips	\$3 00
Felice Gabrielli	Brighton	Best twelve carrots	\$3 00
Felice Gabrielli	Brighton	Best six turnip beets	\$3 00
Felice Gabrielli	Brighton	Best six drumhead cabbage	\$3 00
Felice Gabrielli	Brighton	Best six head red dutch cabbage	\$3 00

Felice Gabrielli	Brighton	Best six head red cabbage	\$3 00
Felice Gabrielli	Brighton	Best three heads of cauliflower	\$3 00
Felice Gabrielli	Brighton	Best three heads of broccoli	\$3 00
Felice Gabrielli	Brighton	Best six heads of lettuce	\$2 00
Felice Gabrielli	Brighton	Best half peck of red onions	\$3 00
Felice Gabrielli	Brighton	Best half peck of yellow onions	\$3 00
Felice Gabrielli	Brighton	Best half peck of white onions	\$3 00
Felice Gabrielli	Brighton	Best twelve roots salsify	\$3 00
Felice Gabrielli	Brighton	Best six stalks celery	\$3 00
Felice Gabrielli	Brighton	Best dozen green sweet corn	\$3 00
Felice Gabrielli	Brighton	Best three muskmelons	\$3 00
Felice Gabrielli	Brighton	Best half peck lima beans, in pod	\$2 00
Felice Gabrielli	Brighton	Best half peck field peas, dry	\$2 00
Felice Gabrielli	Brighton	Best half peck garden peas, dry	\$3 00
Felice Gabrielli	Brighton	Best half peck castor oil beans	\$3 00
Felice Gabrielli	Brighton	Greatest variety of peas, dry	\$3 00
Felice Gabrielli	Brighton	Best three purple egg plants	\$3 00
Felice Gabrielli	Brighton	Best six sugar beets	\$3 00
L. M. Rogers	Nicolaus	Best half peck red onions	\$3 00
Samuel C. Waters	Willows Ranch	Large pumpkin	Special mention
Felice Gabrielli	Clements	Best table of vegetables	\$20 00
Felice Gabrielli	Brighton	Best table of vegetables by producer	\$20 00
CLASS IV.			
Bell Conservatory Company	Sacramento	Largest collection of flowering plants in bloom	\$20 00
Bell Conservatory Company	Sacramento	Best collection of ornamental foliage plants	\$20 00
Bell Conservatory Company	Sacramento	Best display of cut flowers	\$20 00
Bell Conservatory Company	Sacramento	Best collection of new and rare plants	\$15 00
Bell Conservatory Company	Sacramento	Best display of coleus, distinct varieties	\$15 00
Bell Conservatory Company	Sacramento	Most varied exhibit of named varieties of dahlias	\$10 00
Bell Conservatory Company	Sacramento	Best collection of roses in bloom	\$10 00
Bell Conservatory Company	Sacramento	Best collection of fuchsias in bloom	\$10 00
Bell Conservatory Company	Sacramento	Best collection of tuberose in bloom	\$10 00
Bell Conservatory Company	Sacramento	Best collection of pinks	\$10 00
Bell Conservatory Company	Sacramento	Best collection of ferns	\$15 00
Bell Conservatory Company	Sacramento	Best display of bouquets	\$15 00
Bell Conservatory Company	Sacramento	Best collection of plants suitable for conservatory, greenhouse, and window culture	\$15 00
Bell Conservatory Company	Sacramento	Best display of hanging baskets	\$10 00
Bell Conservatory Company	Sacramento	Best display of cut flowers on September sixteenth	\$25 00
Bell Conservatory Company	Sacramento	Best display of cut flowers on September twenty-second	\$25 00
CLASS V.			
Ed. Arthur	Sacramento	Best cheese one year old and over	\$15 00
Ed. Arthur	Sacramento	Best cheese under one year old	\$10 00

FIFTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
Ed. Arthur	Sacramento	Best display of cheese	Diploma and \$15 00
CLASS VI.			
Mrs. F. P. Lowell	Sacramento	Best butter crackers	\$2 00
Mrs. F. P. Lowell	Sacramento	Best sweet crackers	\$2 00
Mrs. F. P. Lowell	Sacramento	Best Boston crackers	\$2 00
Miss S. Sullivan	Sacramento	Best biscuits	\$2 00
Mrs. M. E. Tryon	Sacramento	Best domestic wheat bread	\$5 00
Mrs. M. E. Tryon	Sacramento	Best Graham bread	\$5 00
Miss Mary Schaller	Sacramento	Best domestic corn bread	\$5 00
Miss Mary Schaller	Sacramento	Best domestic rye bread	\$5 00
Mrs. W. H. Wright	Sacramento	Best soda biscuits	\$2 00
Mrs. W. H. Wright	Sacramento	Best domestic brown bread	\$5 00
Mrs. W. H. Wright	Sacramento	Best display of domestic bread	\$10 00
John Hanlon	Walsh Station	Best tub of firkin butter	\$15 00
Andrew Smith	Redwood City	Best display of butter in rolls	\$20 00
Lizzie B. Aiken	Sacramento	Best display of bread	\$5 00
CLASS VII.			
Mrs. R. S. Lockett	Perkins	Best display of sugar cane	\$15 00
Barton & Bell	Sacramento	Best display of confectionery	\$10 00
Barton & Bell	Sacramento	Best general variety of candies made in hall during exhibition	Diploma and \$10 00

SIXTH DEPARTMENT.

FRUITS, PRESERVES, WINES, ETC.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
W. O. Jennings	Red Bluff	Best display and variety of apples	\$25 00
W. D. Carpenter	Diamond Springs	Second best display and variety of apples	\$20 00
Robert McKay	El Dorado County	Third best display and variety of apples	\$15 00

W. J. Belcher	Cosumnes	Fourth best display and variety of apples	\$10 00
Mrs. James Lansing	Sacramento	Fifth best display and variety of apples	\$5 00
Niel McPavitt	Newcastle	Best display and variety of pears	\$25 00
Mrs. James Lansing	Sacramento	Second best display and variety of pears	\$20 00
W. D. Carpenter	Diamond Springs	Third best display and variety of pears	\$15 00
B. N. Bugbey	Sacramento	Fourth best display and variety of pears	\$10 00
J. B. Welty	Sacramento	Fifth best display and variety of pears	\$5 00
J. A. Robinson	Newcastle	Best display and variety of peaches	\$25 00
P. W. Butler	Penryn	Second best display and variety of peaches	\$20 00
George Perkins	Newcastle	Third best display and variety of peaches	\$15 00
Mrs. Mary E. Fox	Newcastle	Fourth best display and variety of peaches	\$10 00
W. D. Carpenter	Diamond Springs	Fifth best display and variety of peaches	\$5 00
Mrs. Mary E. Fox	Newcastle	Best display and variety of plums	\$25 00
E. F. Aiken	Sacramento	Second best display and variety of plums	\$20 00
Mrs. R. S. Lockett	Perkins	Third best display and variety of plums	\$15 00
P. W. Butler	Penryn	Fourth best display and variety of plums	\$10 00
Sam. C. Waters	Clements	Best display of green figs	\$5 00
Mrs. Mary E. Fox	Newcastle	Second best display of green figs	\$2 50
Mrs. Mary E. Fox	Newcastle	Best display of tropical fruits	\$20 00
Isaac Lea	Sacramento	Second best display of tropical fruits	\$10 00
Mrs. Wm. Karr	Marysville	Best display and variety of oranges	\$10 00
W. G. Murphy	Marysville	Best display and variety of lemons	\$10 00
Mrs. James Lansing	Sacramento	Best general display of fruit by producer	\$40 00
Mrs. R. S. Lockett	Perkins	Second best general display of fruit by producer	\$20 00
CLASS II.			
Mrs. R. S. Lockett	Perkins	Best six jars of blackberry jam	\$3 00
Mrs. R. S. Lockett	Perkins	Second best display of jams and jellies in glass	\$3 00
Weber & Co.	Sacramento	Second best display of canned and preserved jams, jellies, etc., by factory	\$10 00
Mrs. H. E. Parker	Penryn	Best six jars strawberry jelly	\$3 00
Mrs. H. E. Parker	Penryn	Best six jars blackberry jelly	\$3 00
Mrs. H. E. Parker	Penryn	Best six jars raspberry jelly	\$3 00
Mrs. H. E. Parker	Penryn	Best six jars currant jelly	\$3 00
Mrs. H. E. Parker	Penryn	Best six jars raspberry jam	\$3 00
Mrs. H. E. Parker	Penryn	Best display of jams and jellies in glass by producer	\$10 00
Mrs. Addie Carter	Sacramento	Best display of fruit in glass by other than factory	\$15 00
Mrs. Addie Carter	Sacramento	Best display of pickles	\$3 00
Mrs. Addie Carter	Sacramento	Best display of branded peaches	\$3 00
Mrs. James Lansing	Sacramento	Best six jars of quince jelly	\$3 00
Sutter Canning Company	Yuba City	Best display of canned and preserved fruits, jams, jellies, etc., by factory	\$20 00
CLASS III.			
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried pears	\$5 00
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried peaches	\$5 00

SIXTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried plums	\$5 00
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried prunes	10 00
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried cherries	5 00
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried blackberries	5 00
Mrs. R. S. Lockett	Perkins	Best ten pounds of dried strawberries	5 00
Mrs. R. S. Lockett	Perkins	Best general display of dried fruit	20 00
H. S. Jory	Stockton	Best display of dried fruits by factory	20 00
Weber & Co.	Sacramento	Second best general display of dried fruits by factory	10 00
Mrs. Mary E. Fox	Newcastle	Best ten pounds of dried figs	10 00
E. Bouch	Roseville	Best ten pounds of dried apples	5 00
A. M. Craig	Winters	Best ten pounds of dried apricots	5 00
W. D. Carpenter	Diamond Springs	Best ten pounds of dried nectarines	5 00
W. D. Carpenter	Diamond Springs	Second best display of dried figs	5 00
W. D. Carpenter	Diamond Springs	Second best general display of fruit by producer	10 00
E. F. Aiken	Sacramento	Largest display of peanuts	5 00
Harry Williamson	Sacramento	Best ten pounds of soft-shelled almonds	10 00
CLASS IV.			
William Foster	Lincoln	Best display of California raisins	20 00
James Rutter	Florin	Second best display of California raisins	10 00
Mrs. R. S. Lockett	Perkins	Best display of California seedless raisins	10 00
J. B. Whitcomb	Colfax	Best six varieties of table grapes	15 00
James Rutter	Florin	Second best six varieties of table grapes	7 50
L. Baunon	Newcastle	Best three varieties of table grapes	10 00
C. T. Adams	Newcastle	Second best three varieties of table grapes	5 00
William Foster	Newcastle	Best variety of table grapes	5 00
James Rutter	Florin	Second best variety of table grapes	2 00
J. B. Whitcomb	Colfax	Best six varieties of wine grapes	15 00
Mrs. James Lansing	Sacramento	Second best six varieties of wine grapes	7 50
Natoma Company	Natoma	Best three varieties of wine grapes	10 00
Mrs. R. S. Lockett	Perkins	Second best three varieties of wine grapes	5 00
Natoma Company	Natoma	Best variety of wine grapes	5 00
James Rutter	Florin	Second best general display of grapes by producer	15 00
Natoma Company	Natoma	Second best variety of wine grapes	2 00
Natoma Company	Natoma	Best general display of grapes by producer	25 00
CLASS V.			
H. W. Crabb	Napa	Best general display of California brandies and wines	100 00
Jno. Kaiser	Loomis	Best grape brandy over one year old	20 00

M. S. Nevis	Sacramento	Best grape brandy one year old	\$10 00
Berringer Bros.	St. Helena	Best white wine	\$20 00
M. M. Estee	Napa	Best claret wine one year old	\$10 00
M. M. Estee	Napa	Best claret wine over one year old	\$15 00
H. W. Crabb	Napa	Best sweet wine	\$20 00
H. W. Crabb	Napa	Best California port wine	\$20 00
M. S. Nevis	Sacramento	Best California sherry wine	\$20 00
H. W. Crabb	Napa	Sauterne, madaga, madeira, blackberry cordial, and chablis	Silver medal.
M. M. Estee	Napa	Sauterne, cabernet, sauvignon, dry muscat, and zinfandel	Silver medal.
Berringer Bros.	St. Helena	Superior California brandy and burgundy wine	Diploma.

SEVENTH DEPARTMENT.

FINE ARTS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
C. Von Perbandt	San Francisco	Eight oil paintings	\$50 00
C. Von Perbandt	San Francisco	Best oil painting in marine view	Silver medal.
Nellie Burrell	San Francisco	Five oil paintings	\$10 00
H. Deussbury	San Francisco	Two oil paintings	\$10 00
Edwin Deakin	San Francisco	Twelve oil paintings, two water colors	\$50 00
Norton Bush	San Francisco	Six oil paintings	\$50 00
Wm. Keith	San Francisco	Six oil paintings	\$30 00
Marius Dahlgren	Oakland	One oil painting	\$20 00
W. A. Coulter	San Francisco	Two oil paintings	\$20 00
L. Roethe	San Francisco	Nine oil paintings, pastels, and water colors	Silver medal and \$20 00
H. Raschen	San Francisco	Sixteen oil paintings	\$50 00
H. Raschen	San Francisco	Best oil painting in genre	Silver medal.
Miss E. M. Sherwood	Oakland	Five oil paintings	\$5 00
Miss H. M. Sherwood	Oakland	Seven oil paintings	\$5 00
Ernest Nariot	San Francisco	Six oil paintings	\$30 00
A. C. Rodriguez	San Francisco	Twelve oil paintings	\$30 00
F. L. Heath	Santa Cruz	Six oil paintings	\$30 00
Mary Curtis Richardson	San Francisco	Best oil portraiture	Silver medal and \$50 00
Fredrika Grosvenor	San Francisco	Ten oil and water color paintings	\$15 00

SEVENTH DEPARTMENT—Continued.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
Mrs. M. H. Payne.....	San Francisco	Five oil and water color paintings.....	\$10 00
S. M. Brookes.....	San Francisco	Eight oil paintings.....	\$30 00
E. Davidson.....	San Francisco	Two oil paintings.....	\$5 00
J. A. Stanton.....	San Francisco	Fourteen oil and water color paintings.....	\$20 00
G. Giunoli.....	San Francisco	One oil painting.....	\$15 00
W. F. Jackson.....	Sacramento	Two oil paintings.....	\$50 00
W. F. Jackson.....	Sacramento	Best landscape in oil.....	Silver medal.
D'Estrella.....	San Francisco	One oil painting.....	\$5 00
Miss Amanda Austin.....	Sacramento	Four oil paintings.....	\$15 00
Mrs. N. E. Boyd.....	San Francisco	Seven oil and water color paintings.....	\$5 00
C. Prosch.....	San Francisco	Four oil and water color paintings.....	\$10 00
Miss May Bailey.....	Oakland	Four oil paintings.....	\$10 00
F. Jay Lewis.....	Newcastle	Two oil paintings.....	\$5 00
Chris. Jorgensen.....	San Francisco	Six water colors.....	\$20 00
Chris. Jorgensen.....	San Francisco	Best display of water colors.....	Silver medal.
Mrs. J. E. Bruner.....	San Francisco	Three oil paintings.....	\$10 00
Hugo Fisher.....	San Francisco	One water color.....	\$10 00
Herrick.....	San Francisco	One oil painting.....	\$5 00
Sacramento School of Design.....	Sacramento	General display of drawings in crayon, charcoal, and pencil; oil paintings in portraiture, still life, sketches, etc.....	Special gold medal.
AMATEURS' GALLERY.			
Miss Hattie Deumer.....	Woodland.....	Two crayons, "Jerseys and Alderneys,".....	\$5 00
Miss Belle Hay.....	San Francisco	Two oil paintings.....	\$10 00
Mrs. E. L. Brackett.....	San Francisco	Eight oil paintings.....	\$15 00
Mrs. A. Ghirardelli.....	San Francisco	Five oil paintings.....	Silver medal and \$15 00
Paul Memegoena.....	San Francisco	Two oil paintings and two crayons.....	\$10 00
Miss Leonora Liés.....	San Francisco	Two oil paintings.....	\$15 00
Miss Lillie Blue.....	Sacramento	Two oil paintings.....	\$5 00
Mrs. C. F. Smith.....	Sacramento	Three oil paintings.....	\$5 00
Miss Addie L. Hughes.....	Sacramento	Two crayon drawings.....	\$5 00
Ida F. Coleman.....	Napa.....	Three water color paintings.....	\$5 00
E. Hummel.....	Sacramento	Three crayon drawings and one oil painting.....	\$5 00
Mrs. G. G. Burnett.....	San Francisco	One crayon drawing.....	\$5 00
CLASS II.			
A. O. Gregory.....	Sacramento	Best display of photographs.....	Silver medal and \$15 00
Geo. D. Stewart.....	Sacramento	One hundred and ten photographs and landscape views of El Dorado.....	\$10 00
Julius Asher.....	Sacramento	Collection of photographs.....	\$10 00
Humboldt County Committee.....	Eureka	Display of photographs of Humboldt County.....	\$15 00

CLASS III.

J. A. Stanton	San Francisco	Pen and ink drawings and pen sketches	Silver medal and \$25 00
Leonora Liés	San Francisco	Pen and ink drawings, india ink sketches	\$25 00
L. Roethe	San Francisco	Pen and ink drawings, india ink sketches	\$25 00
Oscar Deakin	San Francisco	Charcoal and pen drawings	\$15 00
Jules Pages	San Francisco	Pen and ink drawings	\$5 00
Katherine Dewey	San Francisco	Pen and ink drawings	\$5 00

CLASS IV.

F. Happersberger	San Francisco	Design for memorial tablet, three medallion portraits, one bronze medallion, one statuette	Silver medal and \$70 00
W. A. Newell	San Francisco	Three figures in plaster	\$40 00

CLASS V.

Sacramento Business College	Sacramento	Best display of penmanship	Silver medal.
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CLASS VI.

Lena Devilbiss	Winters	One crayon	\$5 00
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EIGHTH DEPARTMENT.

COUNTY EXHIBITS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
J. D. Huffman	Lodi	San Joaquin County exhibit	\$500 00
Geo. C. McMullen	Sacramento	Sacramento County exhibit	\$300 00
F. C. Radcliff	Colusa	Colusa County exhibit	\$250 00
B. M. Berry	Newcastle	Placer County exhibit	\$250 00
J. R. Nickerson	Grass Valley	Nevada County exhibit	\$200 00
W. R. Selkirk	Placerville	El Dorado County exhibit	\$150 00
Fred. W. Bell	Eureka	Humboldt County exhibit	\$150 00
W. G. Murphy	Yuba City	Yuba and Sutter Counties exhibit	\$100 00
P. H. Goffman	Red Bluff	Tehama County exhibit	\$50 00
Frank L. Platt	Vacaville	Solano County exhibit	\$50 00

NINTH DEPARTMENT.

MISCELLANEOUS EXHIBITS.

EXHIBITOR.	P. O. Address.	Article Exhibited.	Award.
L. A. Jeuness	San Francisco	Best patent clothes pole	..... \$3 00
H. D. White	Woodland	Sweep horse-power to attach to pump	..... Diploma.
Childs & Denehy	Acampo	Sectional weed cutter	..... Diploma and \$5 00
Paré Bros.	San Francisco	Wine and cider press	..... Diploma.
Souney Bros.	Sacramento	Improved cylinder for thrashing machine	..... (Special) \$10 00
A. & A. Heilbron	Sacramento	Display of butcher supplies and tools	..... \$5 00
R. F. Derrick	Galt	Variable nozzle	..... \$3 00
Baker & Hamilton	Sacramento	Traction engine	..... Silver medal.
G. G. Wickson & Co.	San Francisco	Display of dairy machinery	..... Diploma and \$5 00
Wm. Zartman	Sacramento	Road machine	..... \$5 00
J. H. Boden	Colusa	Coleman's patent double harness	..... \$3 00
California Fence Co.	San Francisco	Indestructible fire-escape	..... \$5 00
Daniel Best	San Leandro	Grain cleaning attachment for combined header and thrasher	..... Silver medal and \$5 00
Geo. W. Topping	Sacramento	Working model of locomotive No. 155	..... Silver medal.
Don-Ellan & Co.	San Francisco	Fifteen cases Canyonell Bitters	..... Diploma.
Flora C. Kendall	Oakland	Knit woolen stockings	..... \$3 00
Mrs. J. Storch	Sacramento	Chair seat embroidery	..... \$3 00
Miss Ida M. Isaacs	Sacramento	Zephyr knitted cape	..... \$3 00
Miss Clara Miller	Sacramento	Display of paper flowers	..... \$3 00
Miss Lillie Karcher	Sacramento	Display of paper flowers	..... \$3 00
Miss Minnie Heisen	Sacramento	Embroidered piano scarf	..... \$3 00
Mrs. Leland Howe	Sacramento	Baskets made from corn husks	..... \$3 00
Mrs. D. N. Fassett	Sacramento	Embroidered silk quilt	..... \$5 00
Wm. D. O'Kane	San Francisco	Horse boots and turf goods	..... Diploma.
Rose White	Sacramento	Linen bureau scarf	..... \$3 00
Miss Mary Jones	Sacramento	Crocheting and hand-sewing	..... \$3 00
Miss Mary Jones	Sacramento	Fine hand-sewing	..... \$3 00
A. M. McCollum	Sacramento	Skeleton of a horse	..... Diploma.
Mrs. N. B. Vivian	Sacramento	Miscellaneous fancy work	..... \$3 00
Miss Flora Vivian	Sacramento	Barbatine modeling	..... \$5 00
Mrs. Warren Cole	Sacramento	White quilt	..... \$5 00
Whittier, Fuller & Co.	Sacramento	Display of interior decorations	..... Silver medal.
Whittier, Fuller & Co.	Sacramento	Bouquet stands	..... Diploma.
Mrs. C. A. Young	Sacramento	Best crochet work	..... \$3 00
J. R. Kendrick	Sacramento	Best stove drum	..... Diploma.

I. M. Conner	San Francisco	Royal baking pan	\$5 00
Daily "Examiner"	San Francisco	Best display of electrotype plates	Diploma.
Della H. Krull	Sacramento	Pressed natural flowers and cereal work	\$8 00
B. F. Farrar	San Francisco	Best sofa beds	Diploma.
Phoebe C. Brown	Sacramento	Best sick chair	\$3 00
Phoebe C. Brown	Sacramento	Tidy in Spanish	\$2 00
D. H. Emmons	Sacramento	Mitts, hand made	\$3 00
William Foster	Sacramento	Silk quilt	\$3 00
Mrs. S. E. Stevens	Sacramento	General display of stamped work	Diploma.
Mrs. S. E. Stevens	Sacramento	Cross made of mineral specimens	\$5 00
Mrs. C. E. Crocker	Sacramento	Collection of fancy work	\$5 00
G. G. Wickson & Co.	San Francisco	Display of type writing desks	Diploma.
E. C. Mend & Co.	Sacramento	Silver cream	Diploma.
Mrs. P. S. Lawson	Sacramento	Lounge afghan	\$3 00
Truman S. Clark & Son	San Francisco	Best dressing case and washstand (Princess)	Silver medal.
R. E. Gogings	Sacramento	Veterinary medicine chest	Diploma.
McKin & Orth	Sacramento	Knitted worsteds	\$3 00
Suie On	Sacramento	Assortment of Chinese goods	\$5 00
Mrs. W. E. Terry	Sacramento	Crochet bedspread	\$5 00
Mrs. M. M. Fewel	Sacramento	Crochet work	\$3 00
Arper Bros.	Oakland	Best lamp filler (Perfection)	Diploma.
San Francisco "Chronicle"	San Francisco	Best stereotype plates and premiums	Diploma.
Truman S. Clark & Son	San Francisco	Best folding bed	Diploma.
California Cotton Mills Company	East Oakland	Display of cotton and linen fabrics	Diploma.
Miss Emma Clausen	Black's Station	Silk embroidery on muslin	Diploma.
Dr. Lepper's Electric Life	Sacramento	Electric Life and Mountain Tea	\$3 00
Mrs. E. M. Wilson	San Francisco	Vaporizing inhaler	Diploma.
Mrs. E. M. Wilson	San Francisco	Flour bin	Diploma.
Leak Glove Manufacturing Co.	San Francisco	Patent process of tanning leather	Diploma.
George R. Hansbrow	Sacramento	Most original design of exhibits	\$30 00
J. E. Genung	Sacramento	Second best original design of exhibits	\$20 00
Isaac Lea	Florin	Licorice	\$5 00
Isaac Lea	Florin	Chestnuts	\$3 00
Mrs. R. S. Lockett	Perkins	Blackberry wine	\$5 00
Mrs. R. S. Lockett	Perkins	Strawberry wine	\$3 00
Mrs. H. R. Sutcliffe	Sacramento	Green quinces	\$3 00
Del Monte Milling Company	San Francisco	Breakfast cereals, meals, etc.	Diploma.
J. H. Hamilton	Sacramento	Cushaw squash	\$3 00
Weber & Co.	Sacramento	Spices, extracts, etc.	Diploma.
E. F. Aiken	Sacramento	Display of squashes	\$5 00
C. McCreary & Co.	Sacramento	Snowflake superline flour	Diploma.
C. McCreary & Co.	Sacramento	Shipping flour	Diploma.
Mrs. Jas. Curtis	Yolo County	One bale hops	\$5 00
B. N. Bugbey	Sacramento	Broom corn	\$5 00
Mrs. F. P. Lowell	Sacramento	Jellies	\$5 00

NINTH DEPARTMENT--Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
J. D. Huffman	Lodi	Design in wheat (harvester)	Silver medal.
John Wieland & Co.	San Francisco	Beer	Gold medal.
John L. Stubbs	Sacramento	Green quinces	\$3 00
Mrs. H. E. Parker	Perry	Jellies	\$5 00
E. P. Figg	Sacramento	Salt	\$5 00
W. R. Strong & Co.	Sacramento	Artistically arranged display of fruits and vegetables	Diploma.
A. M. Craig	Winters	Winters fruit display	\$10 00
L. M. Boggs	Willows Ranch	Vegetables, etc.	\$2 00
Mrs. Jas. Lansing	Sacramento	Chestnuts	\$5 00
Mrs. J. Hillhouse	Sacramento	Bread	\$3 00
Geo. T. Rich	Sacramento	Cotton plant	\$3 00
S. H. Gerrish	Sacramento	Banana plant	\$5 00
Mrs. M. Silva	Sacramento	Three marrow squashes	\$3 00
B. N. Bugbey	Sacramento	Farm exhibit	Silver medal.
W. C. Curtis	Sacramento	Display of sheaf wheat	\$3 00
W. D. Carpenter	Sacramento	Green quinces	\$3 00

DEPARTMENT GOLD MEDALS.

FIRST DEPARTMENT.

To R. J. Merkley, for most meritorious exhibit of horses.

To Coleman Younger & Son, for most meritorious exhibit of live stock other than horses.
(Herd of Durham cattle.)

SECOND DEPARTMENT.

To Benicia Agricultural Works, for most meritorious display of agricultural machinery.

THIRD DEPARTMENT.

To Mrs. A. Schirmer, for the most meritorious display of textile fabrics. (Ladies' and children's underwear and fancy goods.)

FOURTH DEPARTMENT.

To Huntington, Hopkins & Co., for the most meritorious display of mechanical products.

FIFTH DEPARTMENT.

To Bell Conservatory Company, for the most meritorious display of flowers, plants, etc.

SIXTH DEPARTMENT.

To Mrs. R. S. Lockett, for the most meritorious display of fruits, grapes, etc.

SEVENTH DEPARTMENT.

To Edwin Deakin, for the most meritorious display of fine arts.

NINTH DEPARTMENT.

To California Cotton Mills, for the most meritorious display of cotton and linen goods.

FOR THE MOST ATTRACTIVE DISPLAY.

To Weinstock & Lubin, for the most attractive display in the Pavilion.

REPORT OF THE COMMITTEE OF AWARDS ON COUNTY EXHIBITS.

To the Directors:

Your committee on "County Exhibits," after a thorough and exhaustive examination of the exhibitions made by Colusa, El Dorado, Humboldt, Nevada, Placer, San Joaquin, Sacramento, Solano, Tehama, and Yuba and Sutter Counties, beg to report that they have made the following awards of the \$2,000 appropriated for prizes for county exhibits: To San Joaquin County, \$500; to Sacramento County, \$300; to Placer County, \$250; to Colusa County, \$250; to Nevada County, \$200; to Humboldt County, \$150; to El Dorado County, \$150; to Yuba and Sutter Counties, \$100; to Solano County, \$50; and to Tehama County, \$50. In making these awards we have taken into consideration the variety and quality of the articles exhibited; the extent of the industries which the exhibits represent; their importance in the future development of the State; and to some extent the difficulties of making the exhibits from the remoteness of the county, and the lack of direct communication by rail, etc.

The members of your committee are all long residents of the State, and have seen the growth of its various industries almost from the time of the American occupation, but in this examination they have been surprised and astonished at the extent and variety of the products exhibited by these ten counties: the magnitude and importance of the industries which they now represent, the rapid development during the past decade which they indicate, and the almost unlimited possibilities of the future which they assure to our State. So powerful and profound have been these impressions, and so great and important are the lessons to be learned from them, that we have thought best to put these impressions and lessons upon paper for the benefit of others. In order to do so, more effectually, we present a separate review of each of the counties, their area, natural resources and advantages: their present development, and their future possibilities. In doing this we have been impelled by a desire that others—the tens and hundreds of thousands of our own people who were unable to attend this Fair, and the other tens of thousands of eastern people who are now in this State or who are coming here—should see these exhibits as we saw them, and should read the lessons of our future from them as we have read them. In making the report in this form we must not be understood as conveying the idea that these counties are superior to the other counties of the State, which were not represented, but rather that they fairly represent the advantages which all parts of the State possess.

Before reporting upon these counties in detail, we desire, by way of preface, to speak of the State generally.

CALIFORNIA

Is one of the great States of the Union. It has an area of one hundred and fifty-five thousand square miles, or, in round numbers, one hundred million acres. This area is equal to that of all the great middle States of

the Union, which have a population of twelve million people. It extends through ten degrees of latitude in the southern half of the temperate zone, between the frozen north on the one hand, and the torrid south on the other, and it has every advantage of geographical position. It borders for a thousand miles on the great peaceful ocean, on whose shores more than one third of the world's population dwells. This extended shore line has two of the largest and best sheltered harbors of the world, which invite and afford shelter for the merchant marine of all nations. The northern half is bisected by two great navigable rivers. The San Joaquin, rising in the south, flows north, and the Sacramento, having its sources in the extreme north, flows south, till the two meet and pour their waters into the bay of San Francisco. The valleys of these two streams form one of the largest drainage basins of the continent. Its area is given in the United States Topographical Reports as fifty-eight thousand square miles. These valleys are of great beauty and fertility. They enraptured the Jesuit and Franciscan Fathers in the sixteenth and seventeenth centuries; they extorted the highest praise from the American pathfinders and explorers in the first half of this century: and they were so rich and beautiful that they made the gold-seekers willing exiles from their native States. Flanking these great valleys are two high mountain chains, running north and south. On the west is the Coast Range, the rounded domes of which overlook the Pacific Ocean for seven hundred miles; on the east are the Sierra Nevadas, whose high crest and pinnaced peaks form the eastern part of the State.

Topography.

From this physical conformation there is every topographical feature known to earth. There are wide fertile valleys, for those who prefer the lower levels, sloping uplands and foothills for the dwellers at the mountain's feet, and deep valleys and lofty elevations for those who love the lights and shadows of the great mountains.

Scenery.

No other part of earth presents a more varied panorama of beauty and grandeur, than is found in this Golden State. To the west the great sea rolls her crested waves against jutting cliffs, or over pebbly beaches and long stretches of glistening sands. The gently rounded domes of the Coast Range, and the lofty summits of the Sierras, overlook picturesque valleys and forest-parked plains. Shasta and Lassen, the silent sentinels of the north, lift their heads into the regions of eternal silence. The great rivers flow through the grain-laden valleys, shining in the sun like ribbons of silver set in cloth of gold. Innumerable streams from their mountain sources, dash through narrow gorges, pour in gleaming cataracts down precipitous mountain sides, and whirl in silent eddies at the feet of wide branching forest monarchs. Great woods darken the mountain sides, and evergreen oaks beautify the valleys.

Climate.

But the varied and picturesque beauty of the State is not its most distinguishing characteristic. It is in its climate that it differs from all of its sister States and Territories. Here in the wide valleys, and on the sea coast, there is a continual succession of spring and autumn, leaving no room for winter. It is hard for the eastern home-seeker to understand that on the same parallel of latitude where he lives half of the year amid

snow and ice, there is a country without winter, where the flowers bloom out-doors through the winter months, and where the field worker has the whole year for out-door labor. Such an exceptional climate, in such high latitude, is incomprehensible to the stranger. That the intending settler may be able to comprehend the facts of our climate, we give the causes in brief.

Every one knows that the Gulf Stream, rising in the Carribean Sea, and flowing north and east to the coast of northern Europe, makes the British Isles, in high latitudes, not only inhabitable, but gives them a more temperate climate than that of New England, twelve degrees further south; that it makes France, on the same parallels as ice-bound Labrador, the land of the vine and the ivy.

So it is here: there is in the Pacific a warm river which rises under the torrid sun of the Indian Ocean, and sweeping around the earth's great circle, washes the whole western coast. The air currents, always from the ocean, come over valley and hillsides, tempered from this warm ocean river. There is, however, a more potent factor in causing our exceptional climate than this ocean stream. Starting from the western point of the Alaskan Peninsula, fully one thousand five hundred miles west of San Francisco, there is one continuous high mountain barrier, running south-east into Mexico. This barrier deflects all the Arctic blasts to the east, and gives us only the warm winds from the ocean. The protection afforded by this great mountain wall is illustrated on the line of the Central Pacific Railroad. Auburn is on the west or protected side of the barrier, and Truckee, only eighty miles away, is on the eastern or unprotected side. Truckee has heavy falls of snow, and ice forms of considerable thickness. Auburn has a winterless climate; oranges and lemons hang on the trees all through the winter months, and flowers bloom in her gardens in the open air the year around.

Productions.

This exceptional climate gives the State a list of productions of a vastly more varied character than is known to any of her sister States or Territories. Every production of the temperate or semi-tropic zones is found here. The pine and the palm, the maple and the magnolia, the apple and the apricot, the pomegranate and the plum, the orange and the lemon, and the fig and the citron, do as well here as they do anywhere on earth. Every kind of grape that ever ripened under the sun gives an abundant return for the labor of the vineyardist. Cotton, tobacco, and the mulberry tree of Asia and Europe grow luxuriantly here. It was once said of one of the sunny spots of earth that "it is better to be a worm and feed on the mulberry trees of Daphne than to be a king's guest," and it is probably true that the sunny climate of California produces as tender and delicate a repast for the silkworm from our mulberry trees as the groves of Daphne furnished. It is a well established fact that the semi-tropic climate of California grows abundantly those products which are denied by a harsher and less hospitable climate to other portions of the United States.

There is no doubt that if, as a nation, we are to produce our own wines, it must be done in California. The same may be said of citrus fruits, olives and olive oil, figs, raisins, prunes, and nuts; and we are large importers of many other products which our California soils and climate are eminently adapted to produce.

As showing the great market there is for our products, the following figures of imports of semi-tropic products are taken from the official reports of the United States Treasury Department for 1886:

Figs, 7,233,070 pounds, valued at.....	\$505,876 00
Oranges, to the value of	2,008,819 00
Lemons, to the value of	1,877,839 00
Prunes (dried), 64,995,545 pounds, valued at.....	2,026,595 00
Raisins, 40,387,946 pounds, valued at.....	2,885,123 00
Preserved fruits, to the value of.....	838,557 00
Other fruits, to the value of	1,450,842 00
Olive oil, 634,354 gallons .....	.....
Almonds, 5,822,733 pounds, valued at	647,077 00
Other nuts, to the value of	563,727 00
Wines, to the value of	6,940,041 00
Brandy, to the value of	2,000,000 00
Chicory and licorice, etc., to the value of	3,800,000 00
Sugar, 2,600,000,000 pounds .....	.....
Molasses, 100,000,000 gallons .....	.....
Flax, hemp, jute, etc., 152,566 tons .....	.....
Manufactured articles of flax, hemp, and jute, to the value of.....	20,000,000 00

All these articles can be produced in California, most of them better than in any other part of the United States, and many of them no other part of our country can produce. These are the figures of to-day. After a few decades our population will be double and quadruple its present numbers, and with the increase of wealth, and the consequently increased capacity for the consumption of luxuries, the demand for these articles, which we alone can produce, will be many times what it now is. It will be seen by these figures, that the market for our productions is unlimited, and with whatever speed we may advance in producing them, we can not overtake the demands of the consumption of the country, for a century to come.

The Development Made.

The development of the resources of the State forms one of the most interesting and instructive chapters of the history of the marvelous progress made by the United States in the present century. When the American occupation of this State took place, forty years ago, it was one vast grazing ground. The tillage of the soil was little known. The reverend Fathers had some gardens in which they grew vegetables, and there were a few small orchards and vineyards in the southern and middle portions of the State around the old Missions. When the rush of the gold-seekers came, in eighteen hundred and forty-nine and eighteen hundred and fifty, breadstuffs had to be imported to the coast for their support, and it was years before the State produced the food to feed its own population. The first tillage was along the streams, on the alluvial soils, and it was then believed that those were the only lands which would yield an adequate return for labor. The cereals were the first food plants which were produced on the lands back from the streams, and the experiment of their cultivation on the higher lands of the valleys were made with doubts and misgivings as to success. The introduction and practice of summer fallowing dissolved these doubts, and gave such an impetus to grain growing as, within twenty years, placed California in the front rank of wheat and barley-growing States. Vegetable growing followed grain growing to the higher valley lands, and on to the foothills, and from being an importer of food products California became a large exporter.

Fruit growing on an extended scale dates back hardly more than a decade. Enough had been done in tree and vine cultivation to prove that this is the natural home of all kinds of tree fruits and grapes, but the efforts were only in the direction of local supply. The varieties of fruits and grapes were of the most common kinds, and the wine manufactured met with little favor either at home or abroad. The past ten years has

wrought a complete revolution as to the quantity and quality of orchard and vineyard products.

The choicest varieties of trees and vines have been brought here by our enterprising horticulturists from every soil and climate under the sun, and from the experience gained by home experiments and by the study of the horticulture of all countries, our orchardists and vineyardists have become as skillful as any in the world. The advance made in vine growing and wine making has been marvelous. Our wine, which nobody wanted ten years ago, is now in demand in the Eastern States and is even meeting with favor in Europe.

Markets and Productions.

The building of the transcontinental railways opened the markets of the country west of the Missouri River to our orchard, vineyard, and garden products. That market we now monopolize without competition. The extent of the present and future demand for our products in that market may be judged from the immense area of the country, and the rapidity of its development in wealth and population. Following upon our occupation of this intra-montane market, came the demand for our fruits, wine, and vegetables in all the States to the Atlantic Coast. There are now in the State from one hundred and sixty thousand to two hundred thousand acres of vineyards, and the officers of the Viticultural Commission estimate that the manufacture of wine this season will reach eighteen million gallons. Last year we produced six hundred thousand twenty-pound boxes of raisins, and this year's product will reach nearly one million boxes. The improvement in the quality of the raisins and in the manner of packing for market has more than kept pace with the increase in amount, till now our raisins of all grades compare favorably with those of foreign countries, and have the first call in the eastern markets. The shipments of green fruits to the East the present season by freight trains, passenger trains, and by express, will equal two thousand carloads of ten tons each, and shows a large increase over the season of 1886. This fruit goes to almost every section of the Eastern States, and the demand for it is rapidly increasing each year. It is not only in the trans-Missouri country and in the Eastern States that our green fruits are in demand. Some of our orchardists are making large shipments of fruits to the islands of the Pacific, and to Australia and New Zealand. Mr. De Long, of this committee, ships annually from his Marin County orchards several thousand boxes of apples to Australia, and finds a good demand at remunerative prices.

Canneries and Driers.

As large as are the volumes of the green fruit shipments they are small compared to the quantities which are used by the one million two hundred and fifty thousand people of the State, and by our canneries and driers. During the past season the numbers of driers and canneries which have been established have been very large. Many of the canneries are large establishments, employ several hundred people each, and put up thousands of tons of fruit. The amount of fruit canned in 1887 reaches more than fifty million pounds. Driers and evaporators have been built in all the fruit districts, and in some of these districts the bulk of the crop has either been taken by them or sun-dried. The amount of green fruit dried was fifty-five million five hundred and twenty-five thousand pounds, making more than ten million pounds of dried fruit taken by them. The canned, dried, and evaporated fruit of 1887 is many times greater than it

was in 1886, and the prices are much higher. Our canned and dried fruits are used by the merchant and naval marine of all nations, and by people in many countries which have a climate that *forbids* fruit growing to advantage. This market is growing wider and wider each year, and we may expect these kinds of fruits soon to go wherever the sails of commerce whiten the seas.

The amounts of fruit used by the canneries and driers, and consumed by our own population, can be estimated from the fruit product of some of the older fruit districts of the State. Santa Clara County has one million five hundred thousand fruit trees, and it is estimated that the apricot crop of 1887 amounted to fifteen thousand tons, and the other tree fruits to thirty thousand tons more, or, in all, forty-five thousand tons of tree fruits. This is ninety million pounds, or four thousand five hundred carloads, of ten tons each. The volumes of small fruits grown in Santa Clara County are proportionally as large as those of the tree fruits. On one railroad, from one station (Santa Clara) during the berry season, there was no day that the shipments of blackberries amounted to less than four carloads, and on many days at a time the shipments reached eleven carloads per day. While there may not be any other county which as yet equals Santa Clara in the production of small fruits, there are many coast, valley, and foothill counties which produce large quantities, and the area devoted to their cultivation is constantly increasing. Our small fruits, in the green state, find a market in all that country east of the Sierra Nevada Range to the Missouri River.

Vegetable Growing.

Vegetable growing has, within the past ten years, assumed large proportions. There is not more than one month in the year (January) in which some kinds of vegetables do not mature here. While we have eleven months in which vegetables mature, the great Eastern States, with a population of forty million people, have little more than three months in the year in which they have fresh vegetables of their own production. There is no other considerable portion of the United States which has one half the time for the continuous maturing of fruits or vegetables which California has. It follows that during a considerable portion of the year we can and do furnish the East with their fresh vegetables, as well as with fruits. The larger portion of the Rocky Mountain country is not adapted to farming or gardening, and we furnish that section with their vegetables the year around. There is hardly a town in all that vast region, now rapidly increasing in wealth and population, to which we do not ship vegetables. To the country east of the Missouri River, we ship our garden products in carload or trainload lots, during several months of the year. These shipments are rapidly growing in volume, and the areas to which we ship are constantly widening. The season of shipment to the country east of the Missouri and Mississippi is from October to June. During that time last season, shipments were made by express to nearly all the small towns; and by carload, and by trainload lots, to the larger places. These larger shipments went to Galveston, San Antonio, Sherman, Austin, and New Orleans, in the south; Denver, Butte City, Kansas City, Omaha, Chicago, and as far east as Cleveland and Cincinnati in the north, and the shipments continued as late as the first of June. In this connection it is noticeable that vegetables should have been shipped to Galveston and New Orleans, on the twenty-ninth and thirtieth parallels of latitude, from points in California fully ten degrees farther north. This is strong proof that California, on the fortieth parallel, has more of a semi-tropic climate,

than the Gulf of Mexico has on the twenty-ninth and thirtieth parallels. We have said this much of California in general, and of the development which has been made in the past ten years, in order that what we may say of the ten counties which make county exhibits may be better understood.

SAN JOAQUIN COUNTY.

To which the first prize was awarded, is situated in the center of the great interior basin formed by the San Joaquin and Sacramento Rivers. It has, in round numbers, an area of one thousand five hundred square miles, or nearly one million acres. The greater portion of the area is valley land. The soils are dark alluvium or brown loams, and as rich as those in the valley of the Nile. There is little or no waste land in this county, nearly every foot of it being adapted to some form of cultivation. The Assessor's returns for 1886 show that more than eight hundred thousand acres were under the plow or in use for pasture. Large areas of these valley lands were covered with oak growths at the time of the American occupation, which have been thinned out for purposes of cultivation, transforming them into one immense oak park of great beauty.

The water system of this county is most complete. From the north, the Sacramento River, with its great volume of water, drains the immense drainage basin of the north, and washes the western border of the county. The San Joaquin flows through the county from south to north. Both of these are not only navigable, but they are tidal streams on which the largest steamers ply. The advantages which these streams afford for cheap transit cannot be overestimated. From the east, draining the western slope of the Sierra Nevada Range, there are several clear, rapid, mountain streams. The most considerable of these are the Stanislaus, on the south, the Calaveras, in the center, and the Mokelumne, on the north. These streams, with their tributaries, furnish an abundance of clear pure water for all domestic purposes and for irrigation.

The climate of the county is its principal charm. It is truly winterless and semi-tropical. There is no snow, no ice, and no sweeping winds from the Arctic regions. All the productions of the semi-tropical zones are found in this county. Every rare fruit and flower, from the sunny south, has been brought here by the settlers and cultivated.

The assessment roll shows that there were one hundred and twenty-three thousand fruit trees in this county, and it is reasonable to presume that the returns made the Assessor do not represent more than 60 per cent of the actual number. There is little doubt that the fruit trees in the orchards of San Joaquin County are not far from two hundred thousand. These orchards are represented in the grand exhibit of the county, which occupied an area on the floor of the pavilion of two thousand seven hundred square feet. There were apples, pears, plums, peaches, apricots, and prunes of large growth and fine flavor. There were many varieties of all these kinds of fruits, and they show the perfect adaptability of the soils and climate for a great and successful orchard product.

The exhibits of dried, canned, and preserved fruits represent a profitable and growing industry. Fruit growing in San Joaquin County, still in its infancy, gives promise of a great future. The area of lands adapted to tree growths, the growing demand for green, dried, and canned fruits in the markets of the United States and foreign countries, and the profits of fruit growing, point to a rapid development in the next decade.

The exhibits of vegetables were large and varied. The county has wide areas of alluvial lands along the streams which are perfectly adapted to

the production of all kinds of vegetables, and all the other lands produce fine vegetables in abundance when watered. There are thousands of acres which are devoted to this branch of farming, and the production is very large and annually increasing. The exhibits included every kind of vegetable, and were so fine as to excite admiration. From the growing demand for California vegetables in all the country so far east as the western base of the Alleghanies, the large profit in vegetable growing, and the unexcelled transportation facilities of this county, there can be no doubt that large areas will, in the near future, be devoted to this branch of agriculture. A noticeable feature in the exhibits of this county were the watermelons. The valley of the Mokelumne is known as the "melon belt" of the State. About two thousand acres of land are annually devoted to melon cultivation, and in the season five or six carloads are shipped daily from Lodi and other points. The exhibition of the more semi-tropic productions is worthy of mention. The exhibits of figs, comprising the purple, white Smyrna, and white Adriatic varieties, would indicate that this county alone can produce a large portion of our country's demand.

There were beautiful samples of silk, both raw and manufactured. All parts of this county produce the mulberry tree to perfection. Cotton of a superior quality was shown, and also fine samples of flax and hemp. The excellence of these was such as to give promise that the State can produce all these textile plants to run the spindles and looms to supply our own people with manufactured fabrics, and thereby retain millions of dollars at home which are now sent abroad. The hop exhibits were fine, and we are told that the product is large and the industry of hop growing profitable.

The exhibition of grapes and wines was creditable. There are some fine vineyards in the county. The first grapes grown were the Mission variety, and these were followed by the better table, raisin, and wine varieties. Some of the vineyards, notably those of the West Bros., have now the Cabernet, Sauvignon, Cabernet Franc, the Verdot, Mondeuse, Malbeck, Tannat, and others of the choicest varieties of European wine grapes. The Messrs. West make brandy from the Folle Blanch grape, and it has the highest reputation among California brandies.

The growing of cereals in this county is still the leading agricultural industry. In 1886 there were two hundred and sixty-five thousand acres devoted to wheat growing. The average yield was sixteen bushels to the acre. This is 25 per cent higher than the average crop rate of the United States. In the northern half of the county the average yield is much more, and may be put at twenty bushels to the acre. There were several exhibits of wheat in the sheaf and in the sack, which represented fields that yielded forty, forty-seven, and fifty bushels, respectively, per acre. The exhibitions of barley were fine, and were from fields which had yielded large crops.

There was a notable exhibit of grasses, comprising fifty-three varieties. Many of these were the indigenous grasses which made California so famous as a pasture ground in the old grazing days; others represented grasses imported from many other countries, and are now grown for pasture or for hay. This was an interesting and important exhibit. In the march of our agriculture we are driving out the flocks and herds by the plow of the grain grower and the orchardist. There are to-day fewer sheep and cattle in the State than there were eight years ago, and we have nearly half a million more backs to clothe and mouths to be fed than we had then. We are paying out large sums annually to the grazers of Arizona, Nevada, Oregon, Washington, and Idaho, for beef, wool, mutton, and horses, while we have large areas which would make a better return from grazing than

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they do from wheat. We would call especial attention to this subject. The corn samples were numerous and of good quality.

The *manufactured* products represent some of the most important industries of the State. Stockton occupies a foremost position among the inland towns of California for manufactures. The flour on exhibit represented two of the largest mills on this coast. These two mills have a capacity of two thousand eight hundred barrels per day, and the brand is favorably known in home and foreign markets.

The manufacture of agricultural machinery is very large, employs many men, and the output of machinery and implements is of great value. The "Combined Harvester" works are extensive, and, with other concerns of similar character, have worked a revolution in grain growing in this State. They have done more than this: they have saved that leading industry from disaster, and perhaps from extinction. The competition in the markets of the world which our wheat was subjected to from countries where labor is low or illy paid, was so great that the prices of that staple hardly paid the farmer the cost of its raising. The invention and manufacture of the Combined Harvester reduced the cost of production from \$2 to \$3 per acre. This was a saving to the wheat growers of the State of several millions of dollars annually, and enabled them to compete with the cheap labor product and still make a profit. The exhibitions of leather, woolen goods, paper, soap, agricultural machinery and implements, and furniture, were numerous and of high excellence. We append here a summary of the manufactures of Stockton, furnished us by the managers of the San Joaquin exhibition:

STOCKTON MANUFACTURING ESTABLISHMENTS.

NAME.	Established	Production.	No. Employed	Amount Paid in Wages Monthly.	Value of Annual Output.	Capital Invested.
Sperry & Co.	1852	Flour, mill stuffs	60	\$5,000	\$2,000,000	\$500,000
Crown Mills	1883	Flour, mill stuffs	55	3,500	1,200,000	300,000
Comb. Harvester Works.	1882	Agricultur'l mach'ry	150	10,000	300,000	500,000
Cal. Paper Mill Co.	1877	Paper	60	3,500	250,000	300,000
Matteson & Williamson.	1865	Machinery	40	2,200	110,000	100,000
Pacific Tannery	1855	Leather	40	1,800	150,000	100,000
Buell & Co.	1883	Planing mill works	30	1,500	100,000	35,000
Woolen Mills	1870	Woolen goods	30	1,300	100,000	40,000
M. P. Henderson & Son.	1869	Carriages, etc.	30	1,400	50,000	55,000
Wm. P. Miller	1852	Carriages, etc.	25	1,200	40,000	40,000
Farrington, Hyatt & Co.	1868	Machinery	30	2,250	35,000	50,000
Globe Iron Works	1859	Machinery	20	1,000	40,000	20,000
H. W. Sylvester & Co.	1878	Furniture	50	2,000	80,000	20,000
Stockton Wheel Works	1882	Carriage works	25	1,200	75,000	40,000
White & Thomas	1873	Planing mill works	25	1,000	50,000	30,000
H. C. Shaw	1870	Plows	16	800	20,000	10,000
Stockton Soap Works	1881	Soap	5	250	30,000	10,000
Hoult & Son	1855	Agricultur'l mach'ry	8	700	24,000	20,000
Stockton Broom Factory.	1877	Brooms	8	400	10,000	3,000
Pacific Agricultu'l W'ks.	1875	Agricultur'l mach'ry	12	750	20,000	18,000
E. J. Marsters	1875	Agricultur'l mach'ry	10	600	15,000	12,000
L. Hansel	1852	Carriages, etc.	15	750	20,000	18,000
Breweries (2)		Beer	10	500	35,000	20,000
Windmill makers		Windmills, tanks	30	2,000	75,000	20,000
Total			784	\$45,600	\$4,829,000	\$2,261,000

Much more might be said of the exhibits of this county and the future which is promised by their variety and excellence, but lack of space forbids it.

SACRAMENTO COUNTY

Had one of the largest exhibits in the Pavilion. In fruits of all kinds, and vegetables, it was most excellent.

This county is a central one in the Sacramento Valley, and is on the Sacramento River, which is navigable one hundred and fifty miles above Sacramento City. The most of the area of this county is rich alluvial land. In the eastern portion there are foothills on which the soils are brown or red loams. The area of this county is six hundred and forty thousand acres, of which two hundred thousand acres are under the plow. The crop of 1886 included two million bushels of wheat, five hundred thousand bushels of barley, and large quantities of oats, rye, corn, and hay. The hop crop was two million pounds. The county has, in round numbers, ten thousand horses and fifty thousand sheep. The number of fruit trees returned by the County Assessor is four hundred and eighty-four thousand, and it is safe to say that there are fully six hundred thousand fruit trees growing in the county. The county is watered by the largest streams in the State. On the west is the Sacramento, and on the east are the American, and the Cosumnes, and their numerous tributaries. There is an abundance of timber in every township. This county is one of the oldest in agriculture in the State, General Sutter having been engaged in farming, on ground now included in Sacramento City, long before the days of gold.

The first development in agriculture was in grazing, which was followed by grain growing. In late years orchards, vineyards, and vegetable farms are crowding out the grain fields at a rapid rate. In some districts along the American and Sacramento Rivers vines and trees occupy all the arable lands. In these districts there are some of the largest orchards and vineyards of the State. So large are the orchard products of the Sacramento River district that ten or twelve steamers are engaged in transporting the fruit from the various river landings to the bay of San Francisco and to Sacramento. There are in this district about three hundred thousand fruit trees, or three thousand acres of orchards. The product of these orchards per year is from twenty thousand to thirty thousand tons. This year the crop was much more than an average one, and the yield was in excess of these figures. There are in the county several thousand acres of vines, comprising wine, table, and raisin grapes. These vineyards have the choicest varieties of grapes brought from the vine countries of Europe.

The Natoma Company, near Folsom, has two thousand acres of vines, which include table, wine, and raisin grapes. This vineyard is on the red foothill soil, and demonstrates its perfect adaptability to grape growing. The greater portion of these vines are now three years old last season. At two years of age, they yielded two tons of grapes to the acre, and this year they averaged three tons. This company had some older Flame Tokay vines, which illustrates what the soil and climate, combined with good tillage, will accomplish. Last year some of these vines averaged six tons to the acre, and the grapes sold at \$90 per ton, or \$540 per acre. This year the yield is not so large, but the net returns are \$300 per acre. The Natoma Company has fine orchards near their vineyards. The amount of its orchard and vineyard products this season is seven thousand tons, or seven hundred ten-ton carloads.

On the alluvial soils of the streams of the county, are many large vege-

table farms, devoted exclusively to the production of vegetables of all kinds, for the local markets and those beyond the Sierras.

In this county hop growing has become a leading industry, and it is stated that the production of hops is greater than that of any other county of the State. Small fruit farming is also largely engaged in.

The products of all these industries were exhibited in large quantities and of great excellence. It would require a volume to report upon all the exhibits. Your committee was impressed with the variety of products which can be grown upon one place. The exhibits of Mrs. James Lansing, Mrs. R. S. Lockett, James Rutter, Albert Lea, and E. Greer, were all illustrative of this fact. On the tables of these exhibitors were almost every variety of vegetables; all kinds of fruits, green, dried, and preserved, and the choicest varieties of wine, table, and raisin grapes. There was also cotton, silk, and tobacco. The areas under cultivation from which these varied products came, are less than thirty acres each.

The exhibits of corn, wheat, rye, barley, and oats, were large, and of great merit. The manufactured goods from this county were a prominent feature, and comprised almost every article used in the household, on the farm, and in the shop. They demonstrate the fact that this is rapidly becoming a manufacturing State, and that within a few years, at most, we shall be comparatively independent of outside manufacturers. The mills, factories, and forges, represented by the exhibits of manufactured articles in the Sacramento exhibits, represent a heavy investment of capital, many men employed, large sums paid for labor and raw material, and great quantities of manufactured goods. When we consider how few years have elapsed since there were no mills, forges, or factories on this coast, the advancement already made seems the more marvelous.

In this county there are wide areas of rich soils, near timber, and water, and transportation, which are adapted to fruit tree, vine, vegetable, and hop growing, and other areas adapted to grass, for grazing, and for hay. This land can be had at reasonable prices. When it is considered that now the markets of our own country are demanding more than our orchards, vineyards, and gardens can supply, we may look in the near future for still more wonderful developments in Sacramento County than the past has witnessed.

PLACER COUNTY.

Placer County is properly one of the foothill counties, although her territory extends into the Sacramento Valley. What are known as the foothills of the Sierra Nevada Range, are the approaches to that great mountain elevation in the eastern part of the State. They are comprised of the rolling land adjoining the valley, the sloping uplands, deep, intervening valleys, and the lower mountain sides. They were known to the Spanish explorers as the *tierra templada*—the temperate region—to distinguish them from the *tierra caliente*, and the *tierra fria*, the hot and cold regions of the Spanish colonies in America. The term expresses a striking characteristic of the foothills. To an elevation of three thousand feet above the sea these foothills have a remarkably temperate, equable, and healthy climate. They are neither cold in winter nor hot in summer, but have that happy medium which is the golden mean between the two.

All these foothills are well watered, having a well distributed system of clear running streams from the cañons and gorges above them, and an abundance of springs bursting forth from the hillsides and valleys. They are well supplied with timber, growing on the slopes, and along the

streams, and the whole region is situated just below the vast forest belts of the Sierras, where the lumber supply of the coast is found.

The soils of Placer County, and of the whole foothill area, are red and brown loams on the slopes, and dark alluviums in the valleys. The area of arable land in these foothills is very large. The sloping uplands, which are a prelude to the mountains, the gentle acclivities of the hillsides and the valleys that intervene everywhere, form a large proportion of the foothill area. Placer County has five hundred and twenty thousand acres, and at least three hundred thousand acres are adapted to cultivation. At the commencement of the American occupation fruit trees, vines, vegetables, and cereals, were grown near each mining camp in this *tierra templada*, or temperate region. These experiments demonstrated that all the products of the temperate and semi-tropic zones would mature perfectly there. It was not till within the last ten years that any agricultural industry, other than grain growing and grazing, made much headway in this county. Within the past ten years many small orchards and vineyards have been planted, and they have proved the fitness of the soil and climate for all their products.

Since the building of the Central Pacific Railroad and the opening of the markets of the country east, tree and vine planting has been stimulated. In 1886 the county had three hundred and sixty thousand fruit trees, as returned by the Assessor, and that means, in 1887, five hundred thousand. The assured success of fruit and grape growing, the nearness of the intra-montane markets, the low prices of lands, the salubrious and equable climate, and the picturesque beauty of the foothills, have induced rapid settlement and development.

The extent of the fruit growing in that county can be judged by the shipments from Newcastle, which is only one of the shipping points of a long line of railway. There are four large fruit packing and shipping firms at that place. Each one occupies extensive premises and employs a number of helpers. In 1885 the shipments from this point were more than four and one half million pounds. This season the total of the shipments by express and freight cars, will reach nearly four hundred and fifty carloads, or nine million pounds, and the shipments from the county are estimated to reach seven hundred carloads, or fourteen million pounds.

The fruits grown in the foothills, on the brown or red soils, and in that climate, are remarkable for flavor, and for keeping qualities. This fruit bears transportation to the Atlantic seaboard. It is wonderful the transformation which is taking place on these mountain sides. It is being dotted with picturesque homes, which are surrounded by orchards and vineyards.

The scenery is beautiful. There are winding valleys, beneath overhanging mountains and long sunny slopes, which overlook the broad valley of the Sacramento, with its wide stretches of parked plains. The exhibit from this county was large and varied. It embraced all the tree fruits grown in the colder north, and all those from near the tropics; all the deciduous fruits, and all kinds of grapes, including those delicate varieties which can be grown only in a warm, wooing climate. The exhibit from one small farm included twenty-six varieties of grapes. The exhibits of apples grown at an altitude of three thousand feet attracted attention. The temperature of that altitude gives the fruit a fine, spicy flavor, and a high market value.

The exhibits of dried, evaporated, and preserved fruits were particularly noticeable. There were several exhibits of oranges of this year's growth, on the branches. This county is one of the favored localities for citrus fruit.

There are several large orange groves, which produce fine fruit. Last year this county was awarded the first prize at the Sacramento Citrus Fair. Orange and lemon tree planting is being made each year, and at no distant date Placer County will be one of the famous citrus-producing regions of the coast. Figs, raisins, olives, and olive oil were also on exhibition. There are wide areas in the Placer foothills awaiting more settlers, which will give a golden return for their labor, and make them beautiful homes.

The mineral exhibits of this county attracted attention. They consisted of specimens of gold, silver, coal, iron, copper, chromium, asbestos, and manganese. The specimens of gold ore were especially fine. In the past, the lodes of gold which rib and seam the whole of the Sierras have been neglected for the more easily worked placers. Now, the attention of the miners of the coast is being turned to these rich lode deposits, and the country is being prospected by experienced men. The result will be a wonderful development of lode mining and a largely increased output of gold. This will give the orchardist, vineyardist, and vegetable farmer an increased market at his own door. The specimens of granite, marble, and limestone were noticeable. These form the more durable building materials, and where they are abundant and cheap, the best buildings are possible. Placer County has some of the largest and best granite quarries on the coast, which are largely worked, and give employment to large forces of skilled laborers. The location of Placer County, astride of the overland highway, so near, comparatively, to the trans-Missouri and eastern markets; her rich soils; her timber and water; her mild, equable climate; and her picturesque valleys and hillsides for homes, will insure her a rapid growth.

COLUSA COUNTY.

This is one of the largest counties in the State, her area being about three thousand square miles, or nearly two million acres. Her *location* is in the Sacramento Valley, and the Sacramento River flows along the whole of her eastern portion, furnishing cheap water transportation. Her great area is composed of nine hundred thousand acres of valley lands; five hundred thousand acres of foothill lands, and six hundred thousand acres of coast range lands. This is a small empire in itself, and is capable of sustaining a great population. If her population was as dense as that of cold, bleak New England, she would have a quarter of a million people; if as dense as Massachusetts, she would have half a million people; if she had as dense a population as Belgium, she would have a million people. Now, Colusa County has only six and one half people to the square mile, while Massachusetts has two hundred and twenty-one, and Belgium four hundred and forty-five.

The soil of the valley portion of the county, and of the foothills, is of remarkable fertility. Before it was occupied by the plow it was covered with wild oats as high as a horse's back, or by thick growths of bunch grass, or tangled masses of native clovers. Since the wheat-growing era it has been devoted to producing cereals. For years it has been known as the banner wheat county of the Union. It is claimed by her people that in favorable years she has produced as high as twelve million bushels of wheat and two million bushels of barley. There are only twelve of the States or Territories which produce as much wheat as this county, and there are only four States or Territories which produce as much barley. Her wheat product is seven hundred and twenty million pounds. This is three hundred thousand tons, or thirty-six thousand carloads, or two thousand two hundred and fifty trainloads of sixteen cars each. The wheat of

this county would furnish bread rations for the standing armies of France, Germany, and Austria. Some of the largest wheat ranches of the world are in this county. The Glenn Ranch has a national reputation. It contains forty-five thousand acres in one compact body, every foot of which is under the plow. The past season thirty thousand acres of wheat were harvested, yielding three hundred and fifty thousand sacks, or seven hundred and eighty-seven thousand bushels. This is fifty million pounds, twenty-five thousand tons, two thousand five hundred carloads, or one hundred and fifty trainloads of wheat from a single ranch. There are many other great ranches in this county.

There is an abundance of timber on the valley lands, where there are groves of great wide-spreading oaks. All along the streams there are borders of timber, and on the hill and mountain sides there are forest belts.

The productions of this section are the most marvelous of its advantages. Everything that thrives in higher altitudes and latitudes is found growing here, and the tenderest and most delicate of the semi-tropic growths flourish in the same valley and on the same hillside with their sisters of colder regions. All the small fruits are produced here in profusion and in perfection. Blackberries, strawberries, gooseberries, and currants are raised with only ordinary care and cultivation, and they are a paying crop. Vegetables are grown on all kinds of soils, and they are of the best quality.

General fruit growing in this section has not assumed such proportions as to be one of the leading industries, but it is far from being in its infancy. It is now more than forty years since the first fruit trees and vines were planted. From that time to the present many orchards and vineyards have been grown, and with remarkable and unvarying success. The old orchards and vineyards on the Glenn and Walsh grants, now forty-four years old, are evidences of what the soil and climate can do. There are several hundred other farm orchards and vineyards on all kinds of soils, which are proof positive of the adaptability of this section for varied fruit culture. These proofs are to be seen on the dark soils near the Sacramento, on the brown sides of the rolling lands, on the clay loams of the foothills, and in the higher mountain valleys. The clay loam belt of the foothills is from ten to fifteen miles wide, and sixty miles in length, thus comprising many thousands of acres. The soil is the same as in the far-famed Vaca district; the valleys have the same perfect shelter, and the exposure is similar. There have been numerous horticultural experiments made there, and the success has been all that could have been desired. The tree and vine growths are remarkably large and healthy, and the quantity and quality of fruit produced will compare favorably with that of the best fruit regions of the coast.

The exhibits of fruit made by this county justify all that could be said of them. The fruit in jars was especially fine, and it attracted attention for its uniformly large size and high coloring. The exhibits of grapes were of all kinds, table, raisin, and wine, and were of especial merit. The other exhibits gave evidence of a varied cultivation. All the cereals were represented, comprising wheat, barley, rye, and oats, from the great ranches. There were samples of broom corn, the brush of which was thirty-three inches in length.

The vegetables represented every kind grown on the coast, and most of them were of mammoth size. The grasses were especially noticeable, and their introduction and growth are to be commended, as being in the direction of the production of our own meat and wool in this State. Specimens of cotton were shown, which had large bolls, long staple, and fine fiber. The growth of cotton here would give use to large cotton manufacturing

industries, furnish employment to many men and women, and enrich the State. The exhibits of this county embraced all the fruits of the semi-tropics, including figs, raisins, oranges, lemons, pomegranates, and all kinds of nuts. The great areas of fertile soils, the ample means of transportation, the cheapness of the land, and the ready market at home and abroad, should induce a large immigration of the best settlers, and give a rapid increase of wealth and population to Colusa County.

NEVADA COUNTY

Is another of the foothill counties, in the "*tierra templada*" or temperate region. It is directly north from Placer County, and in topographical conformation, climate, soils, timber, water, and productions, presents a marked similarity to that county. There are the same deep, rich, sheltered valleys, warm, sloping uplands, and rolling foothills, all leading up to the great forest belts, and the higher ranges of the Sierra Nevadas. The water system is one of the best, most extensive, and thoroughly distributed, in the State. The Bear and the forks of the Yuba have their sources in the higher cañons, gorges, and valleys, near the crest of the range, and their tributaries furnish an abundance of water to all portions of the county. There are great belts of timber, higher up the mountain sides, which are practically inexhaustible.

The soils, from the decomposed granite and slate formations, are warm, and rich in all the elements of fertility. The climate is mild, equable, and invigorating. The scenery is varied, and presents every phase of the beautiful, picturesque, and grand. Land is cheap, and for sale in quantities to suit the wants of purchasers. The materials for building and fencing are cheap, and in abundance.

The mineral wealth is beyond estimate, and is being rapidly developed, and in the future the mining districts will be the best markets for the products of the farms, orchards, vineyards, and gardens.

The productions of this county present the same long and varied list as is found in all this warm, frostless belt of the foothills, which extends along the Sierras for so many hundred miles. There have been orchards and vineyards in this county since the earliest years of the "gold era." These have demonstrated the adaptability of the soil and climate to a great production of fruits and wines. There was a large and well arranged exhibit from this county, and the articles exhibited were of marked excellence. The apples from the higher altitudes on the mountain sides were especially noticeable for their size and flavor, in this respect comparing favorably with those of Oregon or the region of the lakes in the Eastern States. Inasmuch as good fall and winter apples have always commanded remunerative prices in our home markets, and inasmuch as they are in active demand for shipments to Mexico, Central America, and the islands of the Pacific, there must be increased areas in the higher foothills devoted to apple orchards.

The exhibit of wine, table, and raisin grapes, is a large one, and embraces the most delicate varieties. The display of deciduous fruits is extensive and of great merit. The vegetable production is represented by some mammoth specimens. There are squashes weighing from one hundred and sixty to one hundred and ninety pounds. The exhibition of cereals is highly creditable. In grasses the display was of great interest. Some fine specimens of hemp and cotton are made. There are also exhibits of bacon, lard, hams, butter, and cheese. There is room in Nevada County for many thousand settlers, and there seems every inducement for them to go there for homes.

HUMBOLDT COUNTY.

The exhibit of Humboldt represented many important and varied industries. The making of such an extensive exhibition from so remote a section, with no direct connection by rail, evinces great public spirit and enterprise on the part of the people of that county.

Humboldt is a coast county, and is one of the largest in the State, having an area of two and one quarter million acres. It has an ocean front of more than one hundred miles, with the best harbor in the State north of San Francisco. The area of this county is composed of the western slope of the Coast Range, which rises there to an altitude of eight thousand feet. Although it is situated wholly north of the fortieth parallel of latitude, all the sea level portion has a mild, winterless climate. The mean temperature of the winter months is forty-eight degrees Fahrenheit, which is fully as mild as that of Naples, the sanitarium of Southern Europe. The annual rainfall is nearly thirty-five inches, and the rainy season is longer than in the interior counties. The advantages of this longer rainy period and greater rainfall are obvious. The agriculturist is less dependent upon irrigation, and the average crop rate is not only large, but there are fewer crop failures.

The *water system* of this county is large and well distributed. The area drained by her rivers and creeks is larger than some of the smaller States of the Union.

The forest belts of this county are among the most noted and extensive of this coast. There are four hundred and seventy thousand acres of red-wood timber land, four hundred thousand acres of pine, spruce, and fir, two hundred thousand acres of oak, madrone, laurel, and other tree growths; there are four hundred and fifty thousand acres of lands adapted to the plow, and five hundred thousand acres of grazing lands. The lumber interests have already assumed immense proportions. There are several large mills, employing many men and teams, and there is quite a fleet of shipping engaged in the transportation of lumber to market. The annual output of lumber from the mills of this county is more than one hundred million feet. In connection with the sawmills there are large planing mills, door, sash, and blind factories.

The *grazing interests* of the county are extensive, the principal products being beef, mutton, wool, butter, and cheese. The heavy rainfall, the length of the rainy season, and the humidity of the atmosphere from the nearness of the pastures to the ocean, give an abundance of green grass.

The figures of the dairy products are not available, but they are large. When the railways, now in course of construction, are completed, Humboldt County will attract a large immigration. There is no other section of this coast with more varied resources. Lumbering, grain, vegetable, and fruit growing, cattle, horse, and sheep raising, and dairying, are productions that will attract the coming settler. The commerce of that county has already assumed large proportions, as will be seen by the following list of arrivals and departures for twelve months at Eureka, the county seat of the county:

Arrivals.	Departures.
Steamers .....148	Steamers .....141
Barks 8	Barks 10
Barkentines 16	Barkentines 17
Brigs 5	Brigs 4
Schooners .....494	Schooners .....502

Any one of the varied resources of Humboldt would insure prosperity, and all of them will give her an unprecedented development. The exhibits include specimens of redwood lumber, showing the enormous size to which those trees attain. One plank exhibited measures six feet and eight inches in width, and another plank is eleven feet and three inches in diameter. This was taken from the tree eighty-four feet from the base. There were many specimens of polished redwood which demonstrate the beauty and desirability of that material for house finishing.

There are samples of mesquite grass more than eleven feet in height, oats eight feet high, and timothy and red top grasses six feet high. The exhibits of grain, fruit, and vegetables are of high excellence. The display of minerals is attractive, and give evidence that a large mining development will follow the construction of railways to that county. Humboldt County has the natural resources to become one of the richest and most populous of the State.

EL DORADO

Is another county in the foothills, and a large portion of her area is situated in the warm gold belt on the eastern slope of the Sierras. This was one of the historic sections of the State in the gold era. Here a large portion of the great stream of eager gold hunters first reached the gold placers as they poured through the passes of the Sierra Nevada. Untold millions of gold were taken from her hill sides, mountain sides, and ravines; and there are still untold millions within her area, awaiting the miner. As rich as she has been, and still is, in precious metals, the wealth of her orchards, vineyards, and gardens promises to be incomparably greater. Her area is one million five hundred thousand acres, more than half of which is adapted to some kind of tillage. The water system of the county is one of the largest and best distributed on the coast. Every hill side and valley has its springs of clear, cold water. Good well water is found everywhere at moderate depths. The mountain sides are covered with great forests of pine, spruce, and fir, and there are no portions of the county without the timber for fuel for the settler.

The soils are rich in fertile elements from the disintegration and washings of the great rock formations of the higher mountains. Land is very cheap and its products have ample transportation facilities to market by railroad.

The climate is the same as in all that region on the western slope of the Sierras. It justifies the name of *templada*, given to it by the early Spanish explorers. It is the true golden mean between the extremes of heat and cold.

To an altitude of twenty-five hundred feet semi-tropic productions in perfection are found. Oranges are grown in and around Placerville, which has an altitude of eighteen hundred feet. Figs, pomegranates, raisin grapes (natives of the valley of the Nile), olives, and apricots, all semi-tropic products, flourish to that altitude. The exhibition of this county is a large and attractive one.

The mineral exhibits embrace rich gold quartz, slate from several quarries now being worked, fine marble, chalk, copper, and iron ore. There are hops, tobacco, cotton, hemp, and flax: peanuts, almonds, walnuts, figs, olives, persimmons, oranges, and lemons: great quantities of peaches, pears, plums, and prunes: wheat, barley, oats, and corn. The display of large vegetables is extensive, and of great excellence. Everything that grows in the temperate and semi-tropic zones seems to find a congenial home in that county. Horticulture is still in its infancy, but enough devel-

opment has been made to prove beyond a doubt that every fruit and grape known to the United States or Europe can be produced there with profit. In soil, climate, timber, water supply, and the cheapness of lands, El Dorado offers unexcelled inducements for settlers, especially those of limited means. Many thousands of families can find room and opportunities where industry can make picturesque homes, surrounded by smiling plenty.

YUBA AND SUTTER COUNTIES.

These two counties make a joint exhibition, and can therefore be jointly considered by your committee. They are situated in the center of the Sacramento Valley, extending from the east bank of the Sacramento Valley almost to the crest of the Sierras. Together they comprise about eight hundred and fifty thousand acres, one hundred and fifty thousand of which are Sierra foothills, and the balance, six hundred thousand acres, are level valley lands, mostly of alluvial formation.

Sutter County is for the greater part a delta plain between the Feather and Sacramento Rivers. With the exception of the area of the Marysville or Sutter Buttes, it is one fertile garden spot. It was there that the first farming in the upper Sacramento was carried on. Early in the forties General Sutter established the celebrated "Hock Farm" on the west side of the Feather River. There he planted fruit trees and vines, and raised the first fruit, and made the first wines of the upper country. Yuba County is two thirds valley and one third foothills. Taken together these two counties are remarkably well watered. Within their area there are the Sacramento and the Feather Rivers, both navigable, the Honcut, Yuba, and Bear Rivers, which furnish an abundant supply of pure mountain water for all the purposes of civilization, navigation, irrigation, manufacture, and domestic use.

Timber once covered the most of the valley lands and the foothills. In the valley portions this has been cleared away, leaving just enough to form oak openings or parks of great beauty. Every section of these two counties has wood for fuel, and the eastern portion of Yuba County extends into the great forest belts of the Sierras. All kinds of building materials are abundant and cheap. The soils are noted for their fertility and lasting qualities. The first large orchards of deciduous fruits in the State were near Marysville, and they demonstrated the perfect adaptability of the soil and climate to a varied and highly remunerative horticultural production. For nearly a quarter of a century Marysville has been one of the prominent fruit shipping points of the State. In that time it has been demonstrated that the fruits of that section are among the earliest and the best in the State. Along the Honcut, the Feather, the Yuba, the Bear, and Sacramento there are large areas of sediment land of unsurpassed fertility. On these sedimentary soils great quantities of vegetables are raised with large profit to the tillers of the soil and to the land owners. Within the past four years there has been marked activity in fruit tree and vine planting, and the area thus planted to orchards and vineyards will aggregate many hundreds of acres.

The area of alluvial and sedimentary lands available for tree and vine planting is very large, and, considering its quality, it is held at low rates. The Yuba County foothills, in soil and climate are similar to those so fully spoken of in Nevada, Placer, and El Dorado Counties.

It is now more than a quarter of a century since citrus and other semi-tropic fruit trees were planted in these two counties. On the Hock Farm, General Sutter's old place, there is a grove of fig trees, the oldest in the

northern part of the State. There are now in Marysville three thousand bearing orange trees, and many of them have been in bearing for a number of years. They present incontrovertible evidence that this is a citrus fruit country. With the proper shelter of cypress hedges or rows of trees, orange and lemon trees will grow and produce on all the valley lands. In the foothills there are many thousand acres of land admirably adapted to citrus fruit growing, which can be had at very low prices. The exhibition of these two counties was a large and handsome one. The display of fruits, vegetables, and cereals attracted general attention. The display of citrus fruits was the best in the Pavilion. The exhibit of B. N. Bugbey, from the alluvial soils, near the Sacramento River, in Sutter County, was noticeable. He had samples of corn which was as large as any grown in the best of the corn States in the Mississippi Valley. Some specimens represented yields of seventy-five bushels to the acre. He had wheat in the sheaf higher than a man's head, broom corn that returns fifty dollars per acre, and mammoth vegetables of all kinds. Yuba and Sutter Counties are comparatively owned in small holdings, and have had, as a consequence, a higher and more thorough development. There is as much wealth, and as many of the comforts and luxuries of life among the farming population, as can be found in any agricultural section of the world. These two counties present unexcelled inducements to home-seekers.

SOLANO COUNTY.

It was unfortunate that the best of all kinds of fruits were out of season when the State Fair was held. The exhibit made by Solano is no index to either the quantity or quality of fruits produced in her orchards and vineyards. The development of fruit growing which has taken place in that county is perhaps without parallel on this coast. As late as 1860, the whole country, now included in the far famed "Vaca district," was a pasture, covered with horses, cattle, and sheep. At about that time a few family orchards and vineyards were planted, and when they arrived at a bearing age they fruited so early as to be the first, or among the first, in market, and brought the highest prices. The vegetables raised in that locality brought high prices for the same reason. The soil is warm, deep, and fertile, the location is sheltered from the cold ocean winds, and the hot, desiccating winds from the north, and the crops are therefore abundant and of fine quality. Add to this their early maturity and the consequent high prices, and it will be seen that fruit and vegetable growing must be very profitable. Fortunes were made by fruit and vegetable growers, and orchard, vineyard, and garden planting received a wonderful stimulus. It is estimated that during the spring of this year three hundred thousand fruit trees were planted in that district. In 1868, the shipments of fruit from Vaca district were on an average only four carloads per day in the flush of the fruit season. In 1886, twenty million pounds of fruit and vegetables were produced and shipped, and in 1887, thirty million pounds were produced, which was worth \$600,000 at least. The Vaca district illustrates the development and the revolution which is taking place in agriculture in California. This little strip of land, not more than six thousand acres, planted in orchards, vineyards, and gardens, and those as yet not in full bearing, produces a greater annual value than ten times its area in grain, and gives employment to several hundreds of men, women, and children, at good wages in the fruit season. Suisun Valley is also a rich fruit section of Solano County. It is another of the sheltered spots of the Coast Range, and is three by seven miles in extent. There are now

about three thousand acres planted to trees and vines. The orchard of A. T. Hatch, comprising eight hundred acres of trees, is one of the largest, if not the largest in the State. There are also orchards and vineyards along Putah Creek, on the Sacramento plains around Dixon, Tremont, Batavia, and Elmira. The extreme western section, around Benicia and Vallejo, is developing a great capacity for some kinds of horticulture. The display of this county in the Pavilion was not in keeping with the position she holds as an orchard, vineyard, and garden county. At the right season she could, and doubtless would, fill the whole Pavilion with fruit. No county in the State presents more attractions for the settler of means than Solano County does.

TEHAMA COUNTY.

This county is situated at the extreme upper portion of the wide Sacramento Valley. It is one of the large counties of the State, having an area of about three thousand two hundred square miles, or two million acres. This area comprises both valley and foothill land. The valley portion is in the center of the county, and is thirty miles from east to west, and forty miles from north to south. The foothill portions of the county are in both the Coast and Sierra Nevada Ranges. There is a large and widely extended water system composed of the Sacramento running south and its tributaries from the two ranges on either side. Of these on the east draining the western slope of the Sierras, there are Battle, Antelope, Mill, and Deer Creeks. On the west draining the Coast Range are the Cottonwood, Hooker, Dibble, Reeds, Red Bank, Oat, Coyote, Duncan, Elder Thorns, and Stony Creeks. There is also a system of evenly distributed springs that burst out at the foot of the hills and bluffs and from the valleys.

There is an abundance of timber on both ranges; in fact, the forest belt of the Sierras has its heaviest timber growth in this county. The valleys have an abundant supply of timber for fuel for all time. The Sacramento River furnishes navigation to the southern border, and there are two railways to this county, one on the east, and the other on the west side of the Sacramento River. The California and Oregon line is now approaching completion, when the vast country comprising British Columbia, and the other portions of the Dominion of Canada, Oregon, Washington, Idaho, Montana, Dakota, Minnesota, and Wisconsin clear to the lakes, will be opened as a market to the orchards, vineyards, and gardens of the upper Sacramento.

The soil of Tehama in the valleys is a rich alluvium, and on the uplands and foothills it is a rich brown or red loam. A quarter of a century's tillage has demonstrated its fertility.

There are old orchards and vineyards in Tehama which antedate the American occupation, and they are still continuous and prolific bearers of fruit. Within the past few years there have been many new orchards and vineyards planted and they are now fruiting. These orchard experiments cover all kinds of soil, and they have been remarkably successful. The tree growths, and the quantity and quality of the fruit, are all that could be desired. There are thousands upon thousands of acres of land in Tehama where thrifty families can have an independent income, make a good living, and have just as picturesque a home as heart could desire. The climate is winterless, and all kinds of semi-tropic fruits grow in the county. There are many orange and lemon trees in Red Bluff, and the town of Tehama, and on the older ranches. J. S. Cone has a fine bear-

ing orange grove on the valley lands of the Sacramento, and there are others equally good. Lands are very cheap and there is everything to attract the home-seeker. The display of grains, grasses, corn, vegetables, and fruit is a large and attractive one. The exhibit of apples is the best in the Pavilion, some specimens weighing two and one fourth pounds each. There are fine pears, peaches, plums, prunes, quinces, pomegranates, wine, raisin, and table grapes, and nuts.

This concludes a review of the exhibits, and an imperfect sketch of the resources, advantages, and developments of the ten counties. We believe that these exhibits point unerringly to a new era for this State; to the rapid subdivision of the great land holdings: to their occupation by families in ten, twenty, and thirty-acre tracts: to the sure extinction of blanket-carrying labor, and to the substitution therefor of small land owners, doing their own work, and to a great increase in population and in production. Your committee have been impressed with the success of the exhibition of this year, and with the great good which is being done for every branch of industry in the State. In order that the exhibits made may have a greater educational effect upon the thousands who see them, we venture to suggest that exhibitors should be required to accompany their exhibits with a history of their production. To illustrate our meaning: an orchardist makes an exhibit of fine peaches; in order that the lesson of their exhibition may be complete and effective, an account of the soil, climate, tillage, and care of the trees, and the manner of picking and packing, should be given. A case of wine of superior quality is exhibited; an account of the exposure, soil, subsoil, temperatures, rainfall, tillage, pruning, picking, and manipulation of the grapes, would teach others how to arrive at the same degree of excellence. And so it would be with all the other exhibits of your Fair. From the mass of reports thus made, much of interest and instruction could be published.

R. W. WATERMAN, Chairman.
L. H. McINTOSH.
H. W. SEALE.
F. C. DELONG.
PARIS KILBURN.

SPEED PROGRAMME.

THURSDAY, SEPTEMBER 15, 1887.

RACE No. 1—TROTTING.

The Occident Stake. For foals of 1884. Entries closed January 1, 1885. One hundred dollars entrance; of which ten dollars must accompany nomination; fifteen dollars to be paid January 1, 1886; twenty-five dollars to be paid January 1, 1887, and fifty dollars thirty days before the race. The Occident Gold Cup of the value of four hundred dollars to be added by the society. First colt, cup and six tenths; second colt, three tenths; and third colt, one tenth of stake. Mile heats, three in five, to harness. Fourth payment has been made in the following entries:

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Soudan, blk. c., by Sultan; dam, Lady Babcock.	L. J. Rose.....	San Gabriel.
Ella, br. f., by Electioneer; dam, Lady Ellen.	Palo Alto Stock Farm.....	Menlo Park.
Sable Wilkes, blk. c., by Guy Wilkes; dam, Sable, by The Moor.....	Wm. Corbitt.....	San Francisco.

Position at Starting.	Position at Close.
1. Sable Wilkes.....	Sable Wilkes.....1 1 2 1
2. Soudan.....	Soudan.....2 2 1 2
Time—2:30; 2:29 $\frac{1}{4}$; 2:31; 2:31 $\frac{1}{2}$.	

RACE No. 2—TROTTING.

2:23 Class. Purse, one thousand dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Thapsin, blk. g., by Berlin; dam, Lady Hubbard.	W. F. Smith.....	Sacramento.
Rexford, b. c., by Electioneer; dam, Rebecca, by Gen. Benton.	Palo Alto Stock Farm.....	Menlo Park.
Lotty M., b. m., by Nephew; dam, by Chieftain.	John E. Moore.....	Stockton.
Marin, b. s., by Quinn's Patchen; dam, by Emigrant.	P. Farrell.....	San Francisco.
Maid of Oaks, ch. m., by Duke's McClellan; dam, Orean Nell.	A. McDowell.....	San Francisco.
Black Diamond, blk. g., by Melton's Gold Dust; dam, Lady Taylor.	H. Hitchcock.....	San Francisco.
Lillie Stanley, b. m., by Whippleton; dam, Dolly McMahan.	John A. Goldsmith.....	Oakland.
Mamie Comet, ch. m., by Nutwood; dam, by Sportsman.	John A. Goldsmith.....	Oakland.
Daisy S, ch. m., by Tilton Almont; dam, by Rattler.	B. W. Levens.....	Oakland.
Valentine, br. g., by Ferrell Clay; dam, Queen.	J. H. Kelly.....	San Bernardino.
Magdallah, ch. m., by Primus; dam, unknown.	Wm. Donathan.....	San Francisco.
Stamboul, b. s., by Sultan; dam, Fleetwing.	L. J. Rose.....	San Gabriel.
John R. Wise, ch. g., by Hamb. Tranby; dam, by Plantagenet.	O. A. Hickok.....	San Francisco.

Position at Starting.	Position at Close.
1. Maid of Oaks.....	Black Diamond.....1 1 3 0 1
2. Daisy S.....	Marin.....5 2 1 0 5
3. Thapsin.....	Thapsin.....2 5 2 3 3
4. Black Diamond.....	Valentine.....3 3 4 5 2
5. Marin.....	Maid of Oaks.....4 4 5 4 4
6. Valentine.....	Daisy S.....6 6 dr.

Time—2:22 $\frac{1}{4}$; 2:21 $\frac{1}{2}$; 2:22 $\frac{1}{2}$; 2:25 $\frac{1}{2}$; 2:26.

RACE NO. 3—PACING.

2:30 Class. Purse, six hundred dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lens, b. g., by Jim Lick; dam, Lady Fallon	W. W. Mendenhall	Livermore.
Haverly, ch. g., by Kansas Signal; dam, unknown	Frank Weber	Sacramento.
Charley Brown, g. g., by Washington; dam, by Taylor	H. P. Brown	Salinas.
Lela S. br. m., by C. P. Duane; dam, by St. Clair	A. H. Hecox	Gilroy.
Fred Ross, b. g.; sire and dam, unknown	Eugene Hart	Pleasanton
Homestake, br. g., by Whippleton; dam, unknown	George Van Gordon	San Francisco.
Robert St. Clara, blk. s., by Jack Roberts; dam, St. Clara	John Warburton	Santa Clara.
Arrow, b. g., by Richmond; dam, Crichton	Duffee & Covarrubias	Los Angeles.
James L. b. g.; dam, unknown	J. Garrity	San Francisco.
Travis, b. g.; dam, unknown	Alex. Lewis	Salt Lake City.
Bracelet, b. g., by Nephew; dam, by Mambrino	J. R. Hodson	Sacramento.

Position at Starting.

Position at Close.

1. Haverly	Arrow	5	2	1	1	1
2. Charley Brown	Homestake	1	1	3	4	2
3. Homestake	Charley Brown	3	1	2	2	3
4. Lela S.	Fred Ross	1	3	4	3	4
5. Fred Ross	Lela S.	2	dis.			
6. Arrow	Haverly	6	dis.			
7. Bracelet	Bracelet	dis.				

Time—2:21 $\frac{3}{4}$; 2:16 $\frac{1}{2}$; 2:21 $\frac{1}{2}$; 2:22; 2:28.

FRIDAY, SEPTEMBER 16, 1887.

RACE NO. 4—RUNNING.

The Introduction Stake. For two-year olds. Twenty-five dollars entrance; ten dollars forfeit; two hundred and fifty dollars added, of which fifty dollars to second; third to save stake. Winner of any two-year old race this year, to carry three pounds; of two or more, five pounds extra. Three quarters of a mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Phoenix, ch. c., by King Alfonso; dam, Fashionette	L. H. Todhunter	Sacramento.
Kildare, ch. g., by Kyrle Daly; dam, Mistake	James B. Chase	San Francisco.
Lenoke, br. f., by Shannon; dam, Tippery, by Tippery	George Hearst	San Francisco.
Question, ch. f., by Monday; dam, Fostress, by Foster	George Hearst	San Francisco.
Monterey, b. g., by Kyrle Daly; dam, Comanche	Rancho Del Paso	Sacramento.
Katisha, b. f., by Kyrle Daly; dam, Maid of Stockdale	Rancho Del Paso	Sacramento.
Alma E., formerly Tricky, b. f., by Joe Hooker; dam, Abbie W.	C. H. Eldred	Sacramento.
Peregrine, ch. c., by Jumbo or Joe Hooker; dam, Irene Harding	W. M. Murry	Sacramento.
Surinam, b. c., by Joe Hooker; dam, Ada C.	W. M. Murry	Sacramento.
Snowdrop, ch. f., by Joe Hooker; dam, Laura Winston	James Garland	Sacramento.
Serpolette, ch. f., by Norfolk; dam, Mattie Glenn	Owens Bros.	Fresno.
Carmen, ch. f., by Wildidle; dam, Nettie Brown	Laurel Wood Stables	Santa Clara.
Kyrle D. b. c., by Kyrle Daly; dam, Maggie S.	Laurel Wood Stables	Santa Clara.
Ed McGinnis, b. c., by Grinstead; dam, Jennie G.	H. L. Samuels	Los Angeles.
Gorgo, br. f., by Isonomy; dam, imported Flirt, by The Hermit	Palo Alto Stock Farm	Menlo Park.
Peel, b. c., by Monday; dam, Precious, by Lever	Palo Alto Stock Farm	Menlo Park.
King Idle, br. c., by Wildidle; dam, Augusta E.	L. H. Todhunter	Sacramento.

RACE NO. 4—RUNNING—Continued.

<i>Position at Starting.</i>	<i>Weight.</i>	<i>Position at Close.</i>	
1. Snowdrop	112 lbs.	Katisha	1
2. Surinam	110 lbs.	Snowdrop	2
3. Lenoke	107 lbs.	Peel	3
4. Katisha	107 lbs.		
5. Peel	107 lbs.		
6. Monterey	107 lbs.		

NOTE.—The horses came in in the following order: Surinam, first; Katisha, second; Snowdrop, third. Snowdrop claimed that Surinam fouled her at post, and on stretch. Allowed, and horses placed as above.

Time—1:19.

RACE NO. 5—RUNNING.

California Breeders' Stake. For foals of 1884. To be run at the State Fair of 1887. Entrance, fifty dollars; twenty-five dollars forfeit, or only ten dollars if declared January 1, 1887; three hundred dollars added, of which one hundred dollars to second, and fifty dollars to third. One mile and a quarter.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Rathbone, br. c., by imported Young Prince; dam, Lady Amanda	J. C. Simpson	Oakland.
Robson, ch. c., by Joe Hooker; dam, Rosetland	J. Cabrera	Fresno.
Miss Ford, b. f., by Enquirer; dam, Bribery	E. J. Baldwin	San Francisco.
Jim Duffy, ch. c., by Joe Hooker; dam, by Wildidle	F. P. Lowell	Sacramento.
Notidle, ch. f., by Wildidle; dam, Bonanza	W. L. Appleby	Santa Clara.
Ledor, br. g., by Nathan Coombs; dam, Gypsy	W. Boots	Milpitas.
Lady Leinster, b. f., by Leinster; dam, Addie A. Idalene Cotton, ch. f., by Jim Brown; dam, Lizzie P	W. L. Pritchard	Sacramento.
Fred Archer, ch. c., by Thad Stevens; dam, Brown Bess	C. Dorsey	Oakdale.
Safe Ban, b. c., by King Ban; dam, Herzogo- vina	L. H. Todhunter	Sacramento.
Argyle, b. c., by Monday; dam, Cuba	Palo Alto Stock Farm	Menlo Park.
Cyrus, b. c., by Wenlock; dam, by imp. Tear- drop	Palo Alto Stock Farm	Menlo Park.

<i>Position at Starting.</i>	<i>Weight.</i>	<i>Position at Close.</i>	
1. Jim Duffy	118 lbs.	Notidle	1
2. Fred Archer	118 lbs.	Jim Duffy	2
3. Notidle	115 lbs.	Fred Archer	3
4. Robson	118 lbs.	Robson	4

Time—2:12½.

RACE NO. 6—RUNNING.

Capital City Stake. For four-year olds. Fifty dollars entrance, h. f., or only fifteen dollars if declared on or before September first; three hundred dollars added, of which one hundred dollars to second; fifty dollars to third. Weights, five pounds below the scale; winner of any race over one mile this year to carry rule weights. One mile and five eighths.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Mayblossom, b. m., by Joe Hooker; dam, Maggie S	W. P. Todhunter	Sacramento.
Edelweiss, br. m., by Joe Hooker; dam, Yo- lona	John Wolfskill	Santa Monica.
Moonlight, b. f., by Thad Stevens; dam, Twi- light	C. H. Eldred	Sacramento.
Hello, ch. g., by Shannon; dam, Marshra	A. Harrison	Stockton.
Patti, b. m., by Wildidle; dam, Nettie Brown	W. L. Appleby	Santa Clara.
Monte Cristo, ch. c., by King Alfonso; dam, Galianthus	L. H. Todhunter	Sacramento.

RACE No. 6—RUNNING—Continued.

<i>Position at Starting.</i>	<i>Weight.</i>	<i>Position at Close.</i>
1. Edelweiss	110 lbs.	Moonlight
2. Patti	110 lbs.	Edelweiss
3. Moonlight	115 lbs.	Patti
<i>Time—2:54.</i>		

RACE No. 7—RUNNING.

Free purse, two hundred and fifty dollars. For all ages, of which fifty dollars to second. Winners of any race this year of the value of three hundred dollars, to carry five pounds; maidens allowed, if three years old, five pounds; if four years old or upwards, fifteen pounds. Mile heats.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Lizzie Dunbar, ch. m. (6), by Bazaar; dam, Tibbie Dunbar	W. L. Pritchard	Sacramento.
Manzanita, ch. g. (8), by Unknown	J. Cabrera	Fresno.
Blackstone, br. c. (3), by Wildidle; dam, Monday	F. Depoister	Sacramento.
Rock, ch. g. (5), by Bob Woolley; dam, Miss Stoner	W. B. Todhunter	Sacramento.
Ninena, ch. f. (3), by Jim Brown; dam, Nannie Hubbard	B. C. Holly	Vallejo.
Elwood, ch. c. (3), by Norfolk; dam, Ballinette	James Garland	Sacramento.
Oro, b. s. (3), by Norfolk; dam, Golden Gate	Owens Bros.	Fresno.
Laura Gardner, ch. f. (3), by Jim Brown; dam, Avail	W. L. Appleby	Santa Clara.
Patti, b. m. (4), by Wildidle; dam, Nettie Brown	Laurel Wood Stable	Santa Clara.

<i>Position at Starting.</i>	<i>Weight.</i>	<i>Position at Close.</i>
1. Blackstone	93 lbs.	Lizzie Dunbar
2. Manzanita	110 lbs.	Manzanita
3. Lizzie Dunbar	115 lbs.	Rock
4. Rock	95 lbs.	Blackstone

NOTE.—Blackstone carried 98 pounds, Rock, 112 pounds.

Time—1:45; 1:44; 1:47 $\frac{3}{4}$.

SATURDAY, SEPTEMBER 17, 1887.

RACE No. 8—TROTTING.

Two-year old Trotting Stake. Fifty dollars entrance, of which ten dollars must accompany nomination; fifteen dollars payable July first, and remaining twenty-five dollars payable August 10, 1887; three hundred dollars added by the society. Closed April fifteenth, with eighteen nominations. Mile heats. The following have made third payment:

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Nehushta, b. f., by Sultan; dam, Neluska	L. J. Rose	San Gabriel.
Lowell, br. c., by Electioneer; dam, Lady Lowell	Palo Alto Stock Farm	Menlo Park.
Grace Lee, b. f., by Electioneer; dam, Addie Lee	Palo Alto Stock Farm	Menlo Park.
Grande, b. g., by Le Grand; dam, by Arthurton	San Mateo Stock Farm	San Mateo.
Moses S, b. c., by Hawthorne; dam, McCracken's Black Hawk	H. Whiting	Stockton.
Memo, bl. c., by Sidney; dam, Flirt	G. Valensin	San Francisco.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Grande	Grande
2. Memo	Memo

Time—2:33 $\frac{1}{4}$; 2:37 $\frac{3}{4}$.

RACE No. 9—TROTTING.

2:27 Class. Purse, one thousand dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mt. Vernon, b. s., by Nutwood; dam, by Chief-tain	J. A. McCloud	Stockton.
Howard, b. g., by Electioneer; dam, Mamie, by Ham., Jr.	Palo Alto Stock Farm	Menlo Park.
Alex Button, b. s., by Alexander; dam, Lady Button	Geo. W. Woodard	Yolo.
Jane L, br. m., by Ham. Mambrino; dam, by Paul Jones	L. B. Lindsay	Portland, Or.
Maid of Oaks, ch. m., by Duke's McClellan; dam, Oreaon Nell	A. McDowell	San Francisco.
Luella, b. m., by Chickamauga; dam, unknown	H. Hitchcock	San Francisco.
Lillie Stanley, b. m., by Whippleton; dam, Dolly McMahan	John A. Goldsmith	Oakland.
Adrian, b. s., by Reliance; dam, Adriana	J. A. Linscott	Watsonville.
Gus Wilkes, b. g., by Mamb. Wilkes; dam, by Bonner	A. L. Hinds	Oakland.
Kate Ewing, bl. m., by Berlin; dam, Lady Washington	Lee Shaner	San Francisco.
Bay Rose, b. s., by Sultan; dam, by The Moor	J. N. Ayres	Visalia.
Tempest, b. m., by Hawthorne; dam, by Chief-tain	H. Whiting	Stockton.
Scandinavian, blk. g., by Black Hawk; dam, unknown	Peter Johnson	San Francisco.
Old Nick, b. g., by Electioneer; dam, Stockton Maid	W. B. Bradbury	San Francisco.
Inez, b. m., by The Moor; dam, Katydid, by Fireman	L. J. Rose	S. Buenaventura.

Position at Starting.	Position at Close.
1. Kate Ewing	Jane L 6 2 1 1 1
2. Luella	Maid of Oaks 1 1 2 2 3
3. Mt. Vernon	Luella 3 3 3 3 2
4. Bay Rose	Mt. Vernon 5 4 4 4 4
5. Maid of Oaks	Bay Rose 4 5 dis.
6. Jane L	Kate Ewing 2 dis.

Time—2:27½, 2:23¾, 2:24½, 2:29½, 2:27½.

RACE No. 10—TROTTING.

Purse, five hundred dollars. For named horses. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rosie Mc, b. m.	G. W. Woodard	Woodland.
Florence R, ch. m.	G. W. Griffin	Woodland.
Wallace G, ch. g.	P. Garrett	Chico.
Pasha, b. s.	W. F. Smith	Sacramento.
Flora G, br. m.	James Dwain	Salinas.

Position at Starting.	Position at Close.
1. Pasha	Wallace G 1 1 1
2. Florence R	Flora G 2 3 3
3. Rosie Mc	Rosie Mc 3 4 2
4. Wallace G	Florence R 4 2 dis.
5. Flora G	Pasha dis.

Time—2:27½, 2:27¼, 2:26½.

MONDAY, SEPTEMBER 19, 1887.

RACE No. 11—RUNNING.

The Premium Stake. For all ages. Fifty dollars entrance, h. f., or only fifteen dollars, if declared on or before September first, with three hundred dollars added, of which one hundred dollars to second; third to save stake. Horses that have started and not won this year, allowed five pounds. Maidens, if three years old, allowed five pounds; if four years old or over, seven pounds. Three quarters of a mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Grover Cleveland, ch. h. (4), by Monday; dam, Robin Girl.....	Matt. Storns.....	Oakland.
Kenney, br. g. (3), by Duke of Montrose; dam, by Virgil.....	Rancho Del Paso.....	Sacramento.
Daffodil, b. f. (2), by Kyrle Daly; dam, by Lodi.	Rancho Del Paso.....	Sacramento.
Prince of Norfolk, ch. h. (6), by Norfolk; dam, Marian.....	W. P. Todhunter.....	Sacramento.
Lenoke, br. f. (2), by Shannon; dam, Tippery, by Tipperary.....	George Hearst.....	San Francisco.
Question, ch. f. (2), by Monday; dam, Fostress, by Foster.....	George Hearst.....	San Francisco.
Edelweiss, br. m. (4), by Joe Hooker; dam, Yolona.....	John Wolfskill.....	Santa Monica.
Tom Atchison, ch. g. (5), by Joe Hooker; dam, Bay Kate.....	C. H. Eldred.....	Sacramento.
Fusilade's Last, ch. f. (2), by John W. Norton; dam, Fusilade.....	B. C. Holly.....	Vallejo.
Blue Bonnet, ch. m. (3), by Joe Hooker; dam, Kate Carson, by Joe Daniels.....	George W. Trahern.....	Stockton.
Elwood, ch. c. (3), by Norfolk; dam, Ballinette.	James Garland.....	Sacramento.
Johnny Gray, g. g. (aged), by Shiloh; dam, Margery.....	Owens Bros.....	Fresno.
Carmen, ch. f. (2), by Wildidle; dam, Nettie Brown.....	Laurel Wood Stable.....	Santa Clara.
Notidle, ch. m. (3), by Wildidle; dam, Bonanza.	W. L. Appleby.....	Santa Clara.
Daisy D, b. m. (5), by Wheatley; dam, Black Maria.....	Cockrill Bros.....	Salinas.
Minnie R, b. m. (5), by Scamperdown; dam, Sallie Blair.....	E. Flitner.....	Placerville.
Ruth, b. m. (4), by Joe Daniels; dam, Queen Emma.....	Thos. G. Jones.....	Pleasanton.
Applause, b. g. (3), by Three Cheers; dam, Alice N.....	Thos. G. Jones.....	Pleasanton.
Rajah, ch. s. (3), by Euchre; dam, Formosa.....	Alex. Lewis.....	Salt Lake.

Position at Starting.	Position at Close.
1. Johnny Gray.....	Daisy D.....1
2. Grover Cleveland.....	Kenney.....2
3. Edelweiss.....	Notidle.....3
4. Daisy D.....	
5. Carmen.....	
6. Kenney.....	
7. Notidle.....	

Time—1:15½.

RACE No. 12—RUNNING.

The California Annual Stake. For foals of 1885; to be run at the State Fair of 1887. One hundred dollars entrance; twenty-five dollars forfeit, or only ten dollars if declared January 1, 1887; two hundred and fifty dollars added, of which one hundred dollars to second; fifty to third. One mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Leon, b. c., by Leinster; dam, Abbie A.	W. L. Pritchard.	Sacramento.
Cannie Scot, ch. c., Leinster; dam, Tibbie Dunbar	W. L. Pritchard.	Sacramento.
ch. c. —, by Jim Gannon; dam, Aunt Jane.	W. L. Pritchard.	Sacramento.
ch. f. —, by Jim Gannon; dam, Avail.	W. L. Pritchard.	Sacramento.
Verona, ch. f., by Jim Gannon; dam, Lizzie P.	P. Siebenthaler.	Sacramento.
Gen. Gordon, b. c., by Hock Hocking; dam, Vixen	A. J. Hutchinson.	Los Angeles.
Kyrle D, b. c., by Kyrle Daly; dam, Maggie S.	Laurel Wood Stable.	Santa Clara.
King Idle, br. c., by Wildidle; dam, Augusta E.	W. B. Todhunter.	Sacramento.
Pocatello, ch. c., by Joe Hooker; dam, Countess Zeika	W. B. Todhunter.	Sacramento.
Snowdrop, ch. f., by Joe Hooker; dam, Laura Winston.	James Garland.	Sacramento.
Alma E, for. Tricksy, b. f., by Joe Hooker; dam, Abbie W.	C. H. Eldred.	Sacramento.
Bolero, b. c., by Norfolk; dam, Neapolitan.	Daniel McCarty.	San Francisco.
Emperor of Norfolk, b. c., by Norfolk; dam, Marian	E. J. Baldwin.	San Francisco.
Coloma, ch. c., by Joe Hooker; dam, Callie Smart	Daniel McCarty.	San Francisco.
Surinam, b. c., by Joe Hooker; dam, Addie C.	W. M. Murry.	Sacramento.
Phoenix, ch. c., by King Alfonso; dam, Fashionette	L. H. Todhunter.	Sacramento.
gr. c. —, by Joe Hooker; dam, Lexington Belle	J. B. McDonald.	Marysville.
ch. c. —, by Joe Hooker; dam, Cordelia Planet.	J. B. McDonald.	Marysville.
Glimpse, b. c., by Foxhall; dam, imp. Fairy Rose	Palo Alto Stock Farm.	Menlo Park.
Bruce, b. c., by Foxhall; dam, imp. Goneaway.	Palo Alto Stock Farm.	Menlo Park.
Peel, b. c., by Monday; dam, Precious	Palo Alto Stock Farm.	Menlo Park.
Ceres, ch. f., by Peregrine; dam, imp. Rosetta.	Palo Alto Stock Farm.	Menlo Park.
Winrow, ch. c., by Foxhall; dam, imp. Cutaway.	Palo Alto Stock Farm.	Menlo Park.
Brutus, b. c., by McGregor; dam, imp. Teardrop.	Palo Alto Stock Farm.	Menlo Park.

Position at Starting.	Weight.	Position at Close.
1. Peel	110 lbs.	Snowdrop 1
2. Snowdrop	107 lbs.	Peel 2
3. Surinam	110 lbs.	Surinam disqualified for foul riding.

Time—1:42 $\frac{3}{4}$.

RACE No. 13- RUNNING.

The La Rue Stake. Handicap for all ages. One hundred dollars entrance; fifty dollars forfeit, with five hundred dollars added, of which one hundred and fifty dollars to second; one hundred dollars to third. Weights announced September tenth. Declaration, twenty dollars; to be made with the Secretary by eight o'clock p. m. September twelfth. In no event will declaration be received unless accompanied with the amount fixed. Two and one quarter miles.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mayblossom, b. m. (4), by Joe Hooker; dam, Maggie S.	W. P. Todhunter.	Sacramento.
Lizzie Dunbar, ch. m. (6), by Bazaar; dam, Tibbie Dunbar.	W. L. Pritchard.	Sacramento.
Narcola, c. m. (3), by Norfolk; dam, Addie C.	Matt Storns.	Oakland.
Moonlight, b. f. (4), by Thad Stevens; dam, Twilight.	C. H. Eldred.	Sacramento.
Ninena, ch. f. (3), by Jim Brown; dam, Nannie Hubbard.	B. C. Holly.	Vallejo.
Dave Douglas, b. g. (aged), by Leinster; dam, Lily Simpson.	G. W. Trahern.	Stockton.
Rathbone, br. c. (3), by imp. Young Prince; dam, Lady Amanda, by imp. Hurrah.	J. C. Simpson.	Oakland.
Patti, b. m. (4), by Wildidle; dam, Nettie Brown.	Laurel Wood Stable.	Santa Clara.
Adeline, ch. f. (3) by Enquirer; dam, Analyne.	D. J. McCarty.	San Francisco.
Laura Gardner, ch. f. (3), by Jim Brown; dam, Avail.	D. J. McCarty.	San Francisco.
John A, blk. h. (6), by Monday; dam, Lady Clare.	H. Whiting.	Stockton.
Monte Cristo, ch. c. (4), by King Alfonso; dam, Galianthus.	L. H. Todhunter.	Sacramento.

*Position at Starting.**Position at Close.*

	Ent. wt.	Weight.	
1. Patti.	115 lbs.	110 lbs.	Adeline. 1
2. John A.	121 lbs.	110 lbs.	Narcola. 2
3. Laura Gardner.	101 lbs.	90 lbs.	Laura Gardner. 3
4. Dave Douglas.	115 lbs.	90 lbs.	
5. Narcola.	101 lbs.	96 lbs.	
6. Moonlight.	115 lbs.	105 lbs.	
7. Adeline.	101 lbs.	95 lbs.	

Time—3:59.

RACE No. 11—RUNNING.

Selling Purse, two hundred and fifty dollars, of which, fifty dollars to second. Fixed valuation, one thousand dollars; two pounds for each one hundred dollars below; two pounds added for each one hundred dollars above fixed value. One mile and an eighth.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mayblossom, b. m. (4), by Joe Hooker; dam, Maggie S. Valuation, \$400	W. P. Todhunter	Sacramento.
Rock, ch. g. (5), by Bob Woolley; dam, Miss Stoner. Valuation, \$200	W. P. Todhunter	Sacramento.
Sir Thad, b. h. (aged), by Thad Stevens; dam, Lady Amanda. Valuation, \$1,000	P. Riley	Grass Valley.
Tom Daly, ch. g. (4), by Kyrle Daly; dam, Columbia. Valuation, \$400	Rancho Del Paso	Sacramento.
Kenney, br. g. (3), by Duke of Montrose; dam, Virgil. Valuation, \$1,000	Rancho Del Paso	Sacramento.
Daffodil, b. f. (2), by Kyrle Daly; dam, by Lodi. Valuation, \$1,000	Rancho Del Paso	Sacramento.
Elwood, ch. c. (3), by Norfolk; dam, Ballinette. Valuation, \$800	James Garland	Sacramento.
Laura Gardner, ch. f. (3), by Jim Brown; dam, Avail. Valuation, \$500	Laurel Wood Stable.	Santa Clara.
Bolero, b. c. (2), by Norfolk; dam, Neapolitan. Valuation, \$1,000	Laurel Wood Stable.	Santa Clara.
Oscar Wilde, b. s. (2), by Don Victor; dam, Esther. Valuation, \$1,000	E. Flittner	Placerville.
Bay Rum, b. g. (aged), by Baywater; dam, a Norfolk mare. Valuation, \$300	Frank Dodge	Placerville.
Rajah, ch. s. (3), by Euchre; dam, Formosa. Valuation, \$800	Alex. Lewis	Salt Lake.

Position at Starting.

Position at Close.

	Ent. wt.	Weight.		
1. Tom Daly	115 lbs.	103 lbs.	Tom Daly	1
2. Bolero	81 lbs.	81 lbs.	Bolero	2
3. Elwood	108 lbs.	101 lbs.	Mayblossom	3
4. Mayblossom	115 lbs.	103 lbs.		
5. Rock	115 lbs.	99 lbs.		
6. Oscar Wilde	81 lbs.	81 lbs.		
7. Bay Rum	115 lbs.	101 lbs.		

NOTE.—The winner, Tom Daly, was sold at auction to D. J. McCarty for \$480.

Time—1:57 $\frac{1}{4}$.

TUESDAY, SEPTEMBER 20, 1887.

RACE No. 15—TROTTING.

Three-year old Trotting Stake. For all colts (except Ella, Soudan, Shamrock, and Sable Wilkes). One hundred dollars entrance; of which twenty-five dollars must accompany nomination; twenty-five dollars payable July first, and remaining fifty dollars payable August 10, 1887. Four hundred dollars added by the society. Closed April fifteenth, with fourteen nominations. Mile heats, three in five. The following have made third payment:

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dubec, b. g., by Sultan; dam, Madam Day	L. J. Rose	San Gabriel.
Maiden, b. f., by Electioneer; dam, May Queen.	Palo Alto Stock Farm.	Menlo Park.
John C. Shelley, b. c., by Hawthorne; dam, by Morgan Rattler	H. Whiting	Stockton.
Flora M, b. f., by Richards' Elector; dam, by Winthrop	L. A. Richards	Grayson.

John C. Shelley, walkover for stakes.

SUBSTITUTE FOR No. 15—PACING

Purse, four hundred dollars. For named pacers.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Billy Bunker, b. g., by Henry Clay, Jr.; dam, unknown	D. Sayer	Denver, Col.
Ella S, r. m., by Townhall; dam, unknown	A. C. Smith	Denver, Col.
Charley Brown, g. g., by Washington; dam, by Taylor	H. P. Brown	Salinas.
Bracelet, b. g., by Nephew; dam, by Mambrino	J. R. Hodson	Sacramento.
Pocahontas, ch. m., by Washington; dam, by Glenco	J. A. Goldsmith	Oakland.

Position at Starting.	Position at Close.
1. Charley Brown	Ella S. 1 1 1
2. Ella S	Billy Bunker 2 2 4
3. Billy Bunker	Charley Brown 3 4 2
4. Pocahontas	Bracelet 4 3 3
5. Bracelet	Pocahontas dis.
Time—2:21½; 2:20½; 2:24½.	

RACE No. 16—TROTTING.

3:00 Class. Purse, eight hundred dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rosie Mc, b. f., by Alex Button; dam, Rosedale	Geo. W. Woodard	Woodland.
Gertrude Russell, b. f., by Electioneer; dam, Winnie, by Planet	Palo Alto Stock Farm	Menlo Park.
Perihelion, b. g., by Admiral; dam, Flora	J. A. Goldsmith	Oakland.
Alpheus, b. h., by Mam. Wilkes; dam, by Major Mono	A. L. Hinds	Oakland.
Alfred S, b. g., by Elmo; dam, Nora Marshall	H. W. Seale	Mayfield.
Allo, br. s., by Altoona; dam, Nellie	A. C. Davenport	Stockton.
Maggie E, br. m., by Nutwood; dam, by Geo. M. Patchen, Jr.	S. B. Emerson	Mountain View.
Geronimo, b. g., by Inez; dam, by Sacramento	C. A. Durfee	Los Angeles.

Position at Starting.	Position at Close.
1. Allo	Allo 1 1 1
2. Perihelion	Perihelion 2 2 3
3. Rosie Mc	Rosie Mc 3 3 2
4. Alfred S (drawn by consent of Judges).	
5. Geronimo (drawn by consent of Judges).	
Time—2:29½; 2:27½; 2:29½.	

RACE No. 17—TROTTING.

2:20 Class. Purse, one thousand two hundred dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sister, b. m., by Admiral; dam, Flora	J. A. Goldsmith	Oakland.
Lot Slocum, b. g., by Electioneer; dam, a Mohawk mare	Lee Shaner	San Francisco.
Menlo, b. s., by Nutwood; dam, by Hercules	Wm. Dwyer	San Francisco.
Stamboul, b. s., by Sultan; dam, Fleetwing	L. J. Rose	San Gabriel.
John R. Wise, ch. g., by Hamb. Franby; dam, by Plantagenet	O. A. Hickok	San Francisco.

RACE No. 17—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>			
1. Menlo	Lot Slocum	1	1	1
2. Lot Slocum	Stamboul	2	2	3
3. Sister	Sister	3	3	2
4. Stamboul	Menlo	4	4	4

Time—2:22; 2:19; 2:21.

WEDNESDAY, SEPTEMBER 21, 1887.

RACE No. 18—RUNNING.

The Sunny Slope Stake. For two-year old fillies. Twenty-five dollars entrance; fifteen dollars forfeit, or only ten dollars if declared on or before September first; one hundred and fifty dollars added, of which twenty-five dollars to second. Those that have started and not run first or second in any race this year, allowed five pounds. Five eighths of a mile.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Orinda, b. f., by Monday; dam, by Longfellow.	W. M. Murry	Sacramento.
Lenoke, br. f., by Shannon; dam, Tippery, by Tipperary	George Hearst	San Francisco.
Question, ch. f., by Monday; dam, Fostress, by Foster	George Hearst	San Francisco.
Katisha, b. f., by Kyrle Daly; dam, Maid of Stockdale	Rancho Del Paso	Sacramento.
Daffodil, b. f., by Kyrle Daly; dam, by Lodi	Rancho Del Paso	Sacramento.
Rosedale, ch. f., by Joe Hooker; dam, by Joe Daniels	J. B. Chase	San Francisco.
Alma E (formerly Tricksy), b. f., by Joe Hooker; dam, Abbie W.	C. H. Eldred	Sacramento.
Sally Hampton, b. f., by Boots; dam, Kate Carson, by Joe Daniels	G. W. Trahern	Stockton.
Snowdrop, ch. f., by Joe Hooker; dam, Laura Winston	James Garland	Sacramento.
Serpolette, ch. f., by Norfolk; dam, Mattie Glenn	Owens Bros.	Fresno.
Carmen, ch. f., by Wildidle; dam, Nettie Brown.	Laurel Wood Stable	Santa Clara.

<i>Position at Starting.</i>	<i>Weight.</i>	<i>Position at Close.</i>	
1. Rosedale	107 lbs.	Lenoke	1
2. Katisha	107 lbs.	Rosedale	2
3. Lenoke	102 lbs.	Katisha	3
4. Sally Hampton	102 lbs.	Sally Hampton	4

Time—1:04.

RACE No. 19—RUNNING.

The Shafter Stake. For three-year olds. Fifty dollars entrance; twenty-five dollars forfeit, or only fifteen dollars if declared on or before September first; with three hundred dollars added, of which one hundred dollars to second; third saves stake. Winner of any race this year to carry five pounds extra; of two or more, ten pounds; maidens allowed five pounds. One mile and a quarter.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Narcola, b. m., by Norfolk; dam, Addie C.	Matt. Storns	Oakland.
Fred Archer, ch. s., by Thad Stevens; dam, by imported Hercules	C. Dorsey	Oakdale.
Etta W, ch. f., by Joe Hooker; dam, by Foster	E. B. Johnson	Chico.
Kenney, br. g., by Duke of Montrose; dam, by Virgil	Rancho Del Paso	Sacramento.
Agnes, ch. f., by Onondaga; dam, Skylight	Rancho Del Paso	Sacramento.
Jack Brady, b. c., by Wildidle; dam, unknown	Davis Bros.	Copperopolis.
Rathbone, br. c., by Young Prince; dam, Lady Amanda	J. C. Simpson	Oakland.
Elwood, ch. g., by Norfolk; dam, by Ballinette	James Garland	Sacramento.
Notidle, ch. f., by Wildidle; dam, Bonanza	W. L. Appleby	Santa Clara.
Adeline, ch. f., by Enquirer; dam, Analyne	D. J. McCarty	San Francisco.
Wallace, b. c., by Joe Hooker; dam, Countess Zeika	H. Whiting	Stockton.
Applause, b. g., by Three Cheers; dam, Alice N	Thos. G. Jones	Pleasanton.

Position at Starting.	Weight.	Position at Close.
1. Applause	110 lbs.	Jack Brady
2. Jack Brady	118 lbs.	Fred Archer
3. Elwood	110 lbs.	Agnes
4. Fred Archer	113 lbs.	
5. Agnes	115 lbs.	
Time—2:12 $\frac{1}{4}$.		

RACE No. 20—RUNNING.

The Del Paso Stake. For all ages. Fifty dollars entrance; twenty-five dollars forfeit, or only fifteen dollars if declared on or before September first; with three hundred dollars added, of which one hundred dollars to second; third saves stake. Three-year olds to carry one hundred pounds; four-year olds, one hundred and ten pounds; five-year olds and upwards, one hundred and twelve pounds; sex, but not heat, allowances. Three-quarter mile heats.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hancock, b. h. (aged), by California; dam, Abbie W	Wm. Connell	San Francisco.
Acton, b. g. (3), by Kyrle Daly; dam, Bonnie Kate	Rancho Del Paso	Sacramento.
Grover Cleveland, ch. h. (4), by Monday; dam, Robin Girl	Matt. Storns	Oakland.
Tom Atchison, ch. g. (5), by Joe Hooker; dam, Bay Kate	C. H. Eldred	Sacramento.
Johnny Gray, g. g. (aged), by Shiloh; dam, Margery	Owens Bros.	Fresno.
Notidle, ch. f. (3), by Wildidle; dam, Bonanza	M. F. Tarpey	Oakland.
Adeline, ch. f. (3), by Enquirer; dam, Analyne	D. J. McCarty	San Francisco.
Ruth, b. m. (4), by Joe Daniels; dam, Queen Emma	Thos. G. Jones	Pleasanton.

Position at Starting.	Weight.	Position at Close.
1. Johnny Gray	109 lbs.	Grover Cleveland
2. Acton	97 lbs.	Adeline
3. Grover Cleveland	110 lbs.	Johnny Gray
4. Adeline	97 lbs.	Acton
Time—1:16; 1:15; 1:15 $\frac{1}{4}$.		

RACE No. 21—RUNNING.

Free Purse, three hundred dollars. For all ages, of which fifty dollars to second. Horses that have started and not won this year allowed ten pounds. Winners this year of any race of the value of four hundred dollars, to carry five pounds extra. Winner of No. 7, ten pounds extra. One mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Stanley, ch. g. (4), by Shannon; dam, Frou Frou	F. L. Smith	Sacramento.
Prince of Norfolk, ch. h. (6), by Norfolk; dam, Marin	W. P. Todhunter	Sacramento.
Mayblossom, b. m. (4), by Joe Hooker; dam, Maggie S	W. P. Todhunter	Sacramento.
Edelweiss, br. m. (4), by Joe Hooker; dam, Yolona	John Wolfskill	Santa Monica.
Cyclone, ch. s. (4), by St. Martin; dam, unknown	C. Dorsey	Sacramento.
Kenney, br. g. (3), by Duke of Montrose; dam, by Virgil	Rancho Del Paso	Sacramento.
Katisha, b. f. (2), by Kyrle Daly; dam, Maid of Stockdale	Rancho Del Paso	Sacramento.
Monterey, b. g. (2), by Kyrle Daly; dam, Comanche	Rancho Del Paso	Sacramento.
Cannie Scot, ch. s. (2), by Leinster; dam, Tibbie Dunbar	W. L. Pritchard	Sacramento.
Moonlight, b. f. (4), by Thad Stevens; dam, Twilight	C. H. Eldred	Sacramento.
Elwood, ch. c. (3), by Norfolk; dam, Bailinette	James Garland	Sacramento.
Hello, ch. g. (4), by Shannon; dam, Marshra	A. Harrison	Stockton.
Oro, b. s. (3) by Norfolk; dam, Golden Gate	Owens Bros.	Fresno.
Carmen, ch. f. (2), by Wildidle; dam, Nettie Brown	Laurel Wood Stable	Santa Clara.
Kyrle D, b. s. (2), by Kyrle Daly; dam, Maggie S	Laurel Wood Stable	Santa Clara.
Laura Gardner, ch. f. (3), by Jim Brown; dam, Avail	W. L. Appleby	Santa Clara.
Notidle, ch. f. (3), by Wildidle; dam, Bonanza	W. L. Appleby	Santa Clara.
Tahoe, ch. c. (3), by imported Fechter; dam, Maritana	H. L. Samuels	Los Angeles.
Rajah, ch. s. (3), by Euchre; dam, Formosa	Alex. Lewis	Salt Lake.

Position at Starting.	Weight.	Position at Close.	
1. Stanley	105 lbs.	Cannie Scot	1
2. Kenney	95 lbs.	Kenney	2
3. Cannie Scot	78 lbs.	Notidle	3
4. Elwood	95 lbs.		
5. Notidle	105 lbs.		
6. Oro	95 lbs.		
7. Monterey	68 lbs.		

NOTE.—Cannie Scot carried 81 pounds.

Time—1:44.

THURSDAY, SEPTEMBER 22, 1887.

RACE No. 22—TROTTING.

2:25 Class. Purse, one thousand dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mt. Vernon, b. s., by Nutwood; dam, by Chief-tain	J. A. McCloud	Stockton.
Ned Forrest, ch. h., by Blackbird; dam, unk'wn	J. J. Reavis	Chico.
Spry, b. g., by Gen. Benton; dam, Sprite	Palo Alto Stock Farm	Menlo Park.
Woodnut, ch. s., by Nutwood; dam, Addie	B. C. Holly	Vallejo.
Marin, b. s., by Quinn's Patchen; dam, by Emi-grant	P. Farrell	San Francisco.
Jane L, br. m., by Hamb. Mamb.; dam, by Paul Jones	L. B. Lindsay	Portland, Or.
Maid of Oaks, ch. m., by Duke's McClellan; dam, Orean Nell	A. McDowell	San Francisco.
Joe Artherton, b. g., by Artherton; dam, Flora	San Mateo St'ck Farm.	San Mateo.
Longfellow, ch. g., by Hambletonian; dam, unknown	H. W. Seale	Mayfield.
Bay Rose, c. s., by Sultan; dam, by The Moor	J. N. Ayres	Visalia.

Position at Starting.	Position at Close.
1. Mt. Vernon	Woodnut 1 1 1
2. Woodnut	Jane L. 2 4 2
3. Marin	Longfellow 3 2 4
4. Jane L	Maid of Oaks 4 3 5
5. Maid of Oaks	Marin 6 5 3
6. Longfellow	Mt. Vernon 5 6 6
7. Bay Rose	Bay Rose dis.

Time—2:21 $\frac{3}{4}$; 2:23 $\frac{1}{4}$; 2:22 $\frac{1}{2}$.

RACE No. 23—TROTTING.

Four-year old Trotting Stake. (Conditions same as No. 15.) Closed April fifteenth, with ten nominations. Mile heats, three in five. The following have made third payment:

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Clifton Bell, b. c., by Electioneer; dam, Claribell	Palo Alto Stock Farm.	Menlo Park.
Gertrude Russell, b. f., by Electioneer; dam, Winnie	Palo Alto Stock Farm.	Menlo Park.
Rexford, br. c., by Electioneer; dam, Rebecca	Palo Alto Stock Farm.	Menlo Park.
Rosie Mc, b. f., by Alex Button; dam, Rosedale	G. W. Woodard	Woodland.
Tempest, b. m., by Hawthorne; dam, by Chief-tain	H. Whiting	Stockton.
Valensin, ch. h., by Crown Point; dam, Nettie Lambert	G. Valensin	San Francisco.

Position at Starting.	Position at Close.
1. Rosie Mc	Tempest 1 1 1
2. Clifton Bell	Clifton Bell 3 2 2
3. Tempest	Rosie Mc 2 3 3

Time—2:26; 2:25 $\frac{1}{2}$; 2:23 $\frac{1}{2}$.

RACE No. 24—PACING.

Free for all. Purse, eight hundred dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Killarney, br. s., by Black Ralph; dam, by imported Eclipse.	P. Fitzgerald	Woodland.
Almont Patchen, br. s., by Juanito; dam, by Gladiator.	W. M. Billup	Colusa.
L. C. Lee, blk. s., by Elmo, Jr.; dam, by Kentucky Chief.	H. Hitchcock	Denver, Col.
Pocahontas, ch. m., by Washington; dam, by Glencoe.	J. A. Goldsmith	Oakland.
Chapman, b. g.; sire and dam, unknown.	Lee Shaner	San Francisco.
Arrow, b. g., by Richmond; dam, by Crichton.	Durfee & Covarrubias	Los Angeles.

Position at Starting.	Position at Close.
1. L. C. Lee	Arrow 1 1 3 1
2. Killarney	Killarney 3 2 2 2
3. Arrow	L. C. Lee 2 3 1 dis.

Time—2:15½; 2:19¼; 2:24; 2:16½.

SPECIAL TROTTING RACE.

For named horses. Purse, four hundred dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Valentine, b. g., by Ferrel Clay; dam, Queen.	J. H. Kelly	San Bernardino.
Luella, b. m., by Chicamauga; dam, unknown.	H. Hitchcock	Denver, Col.
Thapsin, blk. g., by Berlin; dam, Lady Hubbard.	W. F. Smith	Sacramento.
Artist, blk. g., by Nephew; dam, by Mambrino.	J. R. Hodson	Sacramento.

Position at Starting.	Position at Close.
1. Luella	Thapsin 1 1 1
2. Valentine	Valentine 2 2 2
3. Thapsin	Artist 3 3 3
4. Artist	Luella dis.

Time—2:23¼; 2:23¾; 2:25.

FRIDAY, SEPTEMBER 23, 1887.

RACE NO. 25—RUNNING.

The California Derby Stake. For foals of 1884, to be run at the State Fair of 1887. Fifty dollars entrance, p. p., three hundred dollars added; second horse, one hundred dollars; third, fifty dollars. One mile and a half.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady Boots, b. f., by Boots; dam, Lady Stacy	E. K. Alsip	Sacramento.
Robson, ch. c., by Hooker; dam, Rosetland	J. Cabrera	Fresno.
Leap Year, b. f., by Norfolk; dam, Lady Jane	H. Lowden	San Francisco.
Chatelaine, b. f., by Norfolk; dam, Neapolitan	Thomas Delaney	San Francisco.
Safe Ban, b. c., by King Ban; dam, Herzegovina	L. H. Todhunter	Sacramento.
—, b. c., by Wildidle; dam, Lizzie Martin	W. B. Todhunter	Sacramento.
Jim Duffy, ch. c., by Joe Hooker; dam, Wildidle mare	F. P. Lowell	Sacramento.
—, b. c., by Compromise; dam, Wildidle mare	W. B. Todhunter	Sacramento.
—, blk. f., by Compromise; dam, Mollie Stockton	W. B. Todhunter	Sacramento.
Voltiguer, ch. c., by Bullion; dam, Jessamine Porter	E. J. Baldwin	San Francisco.
Blackstone, blk. c., by Wildidle; dam, by Monday	Frank Depoister	Sacramento.
Mark Twain, ch. c., by Monday; dam, Jennie C, by Norfolk	R. S. Bybee	Portland, Or.
Modesto, br. c., by Monday; dam, Rivulet, by Revoli	Thomas Delaney	San Francisco.
Shasta, b. c., by Flood; dam, Demirep, by Melbourne	George Hearst	San Francisco.
Del Norte, b. c., by Flood; dam, Esther, by Express	B. C. Holly	Vallejo.
Laura Gardner, ch. f., by Jim Brown; dam, Avail	Laurel Wood Stable	Santa Clara.
Elaine, ch. f., by Wildidle; dam, Lizzie Brown	H. C. Judson	Santa Clara.

Position at Starting.	Weight.	Position at Close.
1. Robson	118 lbs.	Jim Duffy
2. Laura Gardner	115 lbs.	Robson
3. Jim Duffy	118 lbs.	Laura Gardner

Time—2:40½.

RACE No. 26—RUNNING.

The Palo Alto Stake. For two-year olds. Fifty dollars entrance; twenty-five dollars forfeit, or only fifteen dollars if declared on or before September first; with two hundred and fifty dollars added, of which seventy-five dollars to second; third to save stake. Winner of any two-year old stake this year to carry five pounds extra; of two or more, ten pounds. One mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Monterey, b. g., by Kyrle Daly; dam, Comanche	Rancho Del Paso	Sacramento.
Katisha, b. f., by Kyrle Daly; dam, Maid of Stockdale	Rancho Del Paso	Sacramento.
Peregrine, ch. c., by Jumbo or Joe Hooker; dam, Irene Harding	W. M. Murry	Sacramento.
Surinam, b. c., by Joe Hooker; dam, Ada C.	W. M. Murry	Sacramento.
Snowdrop, ch. f., by Joe Hooker; dam, Laura Winston	James Garland	Sacramento.
Corona, b. f., by Norfolk; dam, sister to Lottery	Owens Bros.	Fresno.
Carmen, ch. f., by Wildidle; dam, Nettie Brown	Laurel Wood Stable	Santa Clara.
Kyrle D, b. c., by Kyrle Daly; dam, Maggie S.	Laurel Wood Stable	Santa Clara.
Bolero, b. c., by Norfolk; dam, Neapolitan	D. J. McCarty	San Francisco.
Gorgo, br. f., by Isonomy; dam, imported Flirt, by The Hermit	Palo Alto Stock Farm	Menlo Park.
Peel, b. c., by Monday; dam, Precious, by Lever.	Palo Alto Stock Farm	Menlo Park.

Position at Starting.

1. Gorgo
2. Bolero

Position at Close.

- | | |
|--------|---|
| Gorgo | 1 |
| Bolero | 2 |

Time—1:43 $\frac{3}{4}$.

RACE No. 27—RUNNING.

The Golden Gate Stake. For three-year olds. Entrance, fifty dollars. Twenty-five dollars forfeit, or only fifteen dollars if declared on or before September first; with three hundred and fifty dollars added, of which one hundred dollars to second; third to save stake. Winner of any three-year old race at this meeting to carry five pounds extra; colts not 1, 2, 3, in No. 19, allowed five pounds. One mile and three quarters.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Narcola, b. m., by Norfolk; dam, Addie C.	Matt. Storns	Oakland.
Jack Brady, b. c., by Wildidle; dam, unknown	Davis Bros.	Copperopolis.
Rathboue, br. c., by Young Prince; dam, Lady Amanda	J. C. Simpson	Oakland.
Elwood, ch. c., by Norfolk; dam, Ballinette	James Garland	Sacramento.
Adeline, ch. f., by Enquirer; dam, Analyne	Laurel Wood Stable	Santa Clara.
Notidle, ch. m., by Wildidle; dam, Bonanza	M. F. Tarpey	Oakland.
Laura Gardner, ch. f., by Jim Brown; dam, Avail	Laurel Wood Stable	Santa Clara.
Tahoe, ch. c., by imp. Fechter; dam, Maritana	H. L. Samuels	Los Angeles.
Applause, b. g., by Three Cheers; dam, Alice N.	Thomas G. Jones	Pleasanton.

Position at Starting.

Weight.

Position at Close.

- | | | | |
|------------|----------|---------|---|
| 1. Notidle | 120 lbs. | Narcola | 1 |
| 2. Elwood | 110 lbs. | Notidle | 2 |
| 3. Narcola | 115 lbs. | Elwood | 3 |

Time—3:08.

RACE No. 28—RUNNING.

The Nighthawk Stake. For all ages. Entrance, fifty dollars. Fifteen dollars forfeit; three hundred dollars added, of which one hundred dollars to second; fifty dollars to third; two hundred dollars additional if 1:41½ is beaten. Stake to be named after winner if Nighthawk's time (1:42½) is beaten. One mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Agnes, ch. f. 3, by Onondaga; dam, Skylight.	Rancho del Paso.....	Sacramento.
Kenney, br. g. (3), by Duke of Montrose; dam, by Virgin.	Rancho del Paso.....	Sacramento.
Prince of Norfolk, ch. h. (6), by Norfolk; dam, Marian.	W. P. Todhunter.....	Sacramento.
Edelweiss, br. m. (aged), by Joe Hooker; dam, Yolona.	John Wolfskill.....	Santa Monica.
Kildare, ch. g. (2), by Kyrle Daly; dam, Mistake.	J. B. Chase.....	San Francisco.
Lizzie Dunbar, ch. m. (6), by Baazar; dam, Tibbie Dunbar.	W. L. Pritchard.....	Sacramento.
Surinam, b. c. (2), by Joe Hooker; dam, Addie C.	W. M. Murry.....	Sacramento.
Alma E, for, Tricksy, b. f. (2), by Joe Hooker; dam, Abbie W.	C. H. Eldred.....	Sacramento.
Fusilade's Last, ch. f. (2), by John W. Norton; dam, Fusilade.	B. C. Holly.....	Vallejo.
Serpolette, ch. f. (2), by Norfolk; dam, Mattie Glenn.	Owens Bros.....	Fresno.
Carmen, ch. f. (2), by Wildidle; dam, Nettie Brown.	Laurel Wood Stable.....	Santa Clara.
Notidle, ch. f. (3), by Wildidle; dam, Bonanza.	Laurel Wood Stable.....	Santa Clara.
Adeline, b. f. (3), by Enquirer; dam, Analyne.	Laurel Wood Stable.....	Santa Clara.
Daisy D, b. m. (5), by Wheatley; dam, Black Maria.	Cockrill Bros.....	Salinas.
John A, blk. h. (6), by Monday; dam, Lady Clare.	H. Whiting.....	Stockton.
Ed McGinnis, b. c. (2), by Grinstead; dam, Jennie G.	H. L. Samuels.....	Los Angeles.
Gorgo, b. f. (2), by Isonomy; dam, imp. Flirt, by The Hermit.	Palo Alto Stock Farm.....	Menlo Park.
Applause, b. c. (3), by Three Cheers; dam, Alice N.	Thos. G. Jones.....	Pleasanton.

Position at Starting.

1. Adeline.....
2. Edelweiss.....
3. Agnes.....
4. Kenney.....
5. Ed. McGinnis.....
6. Lizzie Dunbar.....

Position at Close.

- | | |
|----------------|---|
| Edelweiss..... | 1 |
| Adeline..... | 2 |
| Agnes..... | 3 |

NOTE.—Lizzie Dunbar came in first, but was disqualified for foul riding; in the opinion of the Judges, unintentional.

Time—(By Lizzie Dunbar), 1:42¾.

RACE No. 29—RUNNING.

Free Purse, two hundred and fifty dollars. For all ages, of which fifty dollars to second. Horses not having won at this meeting allowed five pounds. Horses that have not run second or better at this meeting, allowed ten pounds. One mile and a sixteenth and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Grover Cleveland, ch. h. (4), by Monday; dam, Robin Girl.	Matt. Storns	Oakland.
Hancock, b. h. (aged), by California; dam, Abbie W.	Wm. Cornell	San Francisco.
Mayblossom, b. m. (4), by Joe Hooker; dam, Maggie S.	W. P. Todhunter	Sacramento.
Rock, ch. g. (5), by Bob Woolley; dam, Miss Stoner.	W. P. Todhunter	Sacramento.
Manzanita, ch. g. (8); sire and dam unknown.	J. Cabrera	Fresno.
Moonlight, b. f. (4), by Thad Stevens; dam, Twilight.	C. H. Eldred	Sacramento.
Dave Douglas, b. g. (aged), by Leinster; dam, Lily Simpson, by Newry.	G. W. Trahern	Stockton.
Elwood, ch. c. (3), by Norfolk; dam, Ballinette.	Jas. Garland	Sacramento.
Oro, b. s. (3), by Norfolk; dam, Golden Gate.	Owens Bros.	Fresno.
Patti, b. f. (4), by Wildidle; dam, Nettie Brown.	Laurel Wood Stable	Santa Clara.
Laura Gardner, ch. f. (3), by Jim Brown; dam, Avail.	Laurel Wood Stable	Santa Clara.
Adeline, ch. f. (3), by Enquirer; dam, Analyne.	Laurel Wood Stable	Santa Clara.

Position at Starting.	Weight.	Position at Close.
1. Dave Douglas	100 lbs.	Dave Douglas 3 2 0 1 1
2. Oro	93 lbs.	Patti 0 1 0 2 2
3. Manzanita	105 lbs.	Manzanita 0 6 dis.
4. Patti	100 lbs.	Moonlight 5 3 r. o.
5. Elwood	90 lbs.	Elwood 4 5 dis.
6. Moonlight	110 lbs.	Oro 6 4 dis.

NOTE.—After the fourth heat the race was continued until next day.

Time—1:51½; 1:51½; 1:51½; 1:54; 1:50½.

SATURDAY, SEPTEMBER 24, 1887.

RACE No. 30—TROTTING.

Special Three-year old Stake. For Ella, Soudan, Shamrock, Sable Wilkes, and others. (Conditions, same as Regular Stake No. 15.) Closed April fifteenth, with six nominations. Mile heats, three in five. The following have made third payments:

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Soudan, bl. h., by Sultan; dam, Lady Babcock.	L. J. Rose	Los Angeles.
Ella, br. f., by Electioneer; dam, Lady Ellen.	Palo Alto Stock Farm	Menlo Park.
Sable Wilkes, bl. c., by Guy Wilkes; dam, Sable.	San Mateo Stock Farm	San Mateo.

Sable Wilkes walkover.

Time—2:27¼.

SPECIAL TROTTING RACE.

For named horses. Purse, six hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Marin, b. s., by Quinn's Patchen; dam, by Emigrant.....	P. Farrell.....	San Francisco.
Thapsin, blk. g., by Berlin; dam, Lady Hubbard.....	W. F. Smith.....	Sacramento.
Longfellow, ch. g., by Hambletonian; dam, unknown.....	H. W. Seale.....	Mayfield.
Valentine, br. g., by Ferrel Clay; dam, Queen.....	J. H. Kelly.....	S. Buenaventura.
Luella, b. m., by Chickamauga; dam, unknown.....	H. Hitchcock.....	Denver, Col.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Luella.....	Luella.....2 4 1 1 1
2. Thapsin.....	Thapsin.....1 1 3 4 3
3. Marin.....	Longfellow.....3 2 2 2 2
4. Longfellow.....	Marin.....4 5 5 3 4
5. Valentine.....	Valentine.....5 3 4 5 5

Time—2:25 $\frac{1}{2}$; 2:23; 2:23 $\frac{1}{2}$; 2:26; 2:27.

RACE NO. 31—TROTTING.

Grand free for all. Purse, one thousand five hundred dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lot Slocum, b. g., by Electioneer; dam, a Mohawk mare.....	L. Shaner.....	San Francisco.
Arab, b. g., by Arthurton; dam, Lady Hamilton.....	O. A. Hickok.....	San Francisco.
Adair, b. g., by Electioneer; dam, Addie Lee.....	W. F. Smith.....	Sacramento.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Adair.....	Arab.....1 2 1 1
2. Arab.....	Lot Slocum.....2 1 2 3
3. Lot Slocum.....	Adair.....3 3 3 2

Time—2:18; 2:17 $\frac{1}{2}$; 2:17 $\frac{1}{2}$; 2:20.

RACE NO. 32—TROTTING.

2:40 Class. Purse, one thousand dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Howard, b. g., by Electioneer; dam, Mamie, by Ham, Jr.....	Palo Alto Stock Farm.....	Menlo Park.
Manzanita, ch. g., by Elmo; dam, Ida May.....	J. D. Carr.....	Salinas.
Alfred S. b. g., by Elmo; dam, Nora Marshall.....	H. W. Seale.....	Mayfield.
Maggie E. b. m., by Nutwood; dam, by Geo. M. Patchen, Jr.....	S. B. Emerson.....	Mountain View.
Old Nick, b. g., by Electioneer; dam, Stockton Maid.....	W. B. Bradbury.....	San Francisco.
Inez, b. m., by The Moor; dam, Katydid, by Fireman.....	L. J. Rose.....	San Gabriel.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Old Nick.....	Old Nick.....1 1 1
2. Manzanita.....	Manzanita.....2 2 2

Time—2:24 $\frac{1}{2}$; 2:35 $\frac{1}{2}$; 2:26 $\frac{1}{2}$.

REPORT OF RACES.

By JOSEPH CAIRN SIMPSON.

FIRST DAY.

The racing programme of the State Fair began Thursday, September fifteenth, at Sacramento. There was a large and brilliant attendance; the splendid track was never in finer condition, and the sport so far has been of a more than usually interesting description.

For several years past the meeting has opened with the trot for the Occident Stake, and this year that important event headed the programme. Of the long list of original subscribers the entries dwindled down to three, and of these but two started: Sable Wilkes, the representative of the San Mateo Stock Farm, and Soudan, from Sunny Slope. It was a foregone conclusion that the son of Guy Wilkes must win; his easy victory over Soudan in the race for the Stanford Stake on the twelfth instant stamped him as a certain winner, and naturally the pools sold on him were at the rate of \$100 to \$12 for Soudan. The race does not need much description. Sable Wilkes went off with a lead in the first and second heats, and maintained his advantage throughout, winning comfortably by two lengths.

In the third heat he again led off, but broke at the half-mile post and fell behind, Soudan taking the heat. In the fourth heat Sable Wilkes led off and finished first without being at any time pressed; the time for each heat being much slower than in the race for the Stanford Stake over the Bay District Course.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 15, 1887.—Occident Stake, for foals of 1884. Entries closed January 1, 1885; \$100 entrance, of which \$10 must accompany nomination; \$15 to be paid January 1, 1886, and \$25 to be paid January 1, 1887, and \$50 thirty days before the race. The Occident gold cup of the value of \$400 to be added by the society. First colt, cup and six tenths; second colt, three tenths; and the third colt, one tenth of stake. Mile heats, three in five, to harness.

Sable Wilkes, blk. c., by Guy Wilkes—San Mateo Stock Farm	1	1	2	1
Soudan, blk. c., by Sultan—L. J. Rose	2	2	1	2

Time—2:30; 2:29½; 2:31; 2:31½.

The second race was the 2:23 class, for which six started: Black Diamond, Marin, Thapsin, Valentine, Maid of Oaks, and Daisy S. The battle was fought out between Black Diamond and Marin, but both Thapsin and Valentine showed good quality, staying well through the five heats. Stamboul was entered for the race, but as it was regarded as a certainty for him he was withdrawn, taking, however, a share of the purse by mutual consent of the starters. Pools sold: Valentine \$50, Thapsin \$22, Marin \$22, field \$24; and, as the result showed, it was a fielder's race.

The first heat astonished the backers of the favorite. Black Diamond got off well and led the whole way, winning by a couple of lengths; Thapsin second, Valentine third. The quarter was made in 0:35, the half in 1:11, and the mile in 2:22½. The second had many similar features, Black

Diamond leading from the first turn to the wire. The quarter was made in 0:35 $\frac{1}{4}$, the half in 1:11, the mile in 2:21 $\frac{1}{2}$. Marin showed up well in the heat and beat Valentine out for second place.

For the third heat, Black Diamond showed them all the way to the first quarter, which he covered in 0:35, and he held his ground past the half in 1:11. In the straight he broke badly, and Marin coming up in good form, passed first under the wire in 2:22 $\frac{1}{2}$, Thapsin second, Black Diamond third. This heat brought Marin to the front in the pool box, he being first choice.

The fourth heat gave Marin a lead which he kept to the quarter, Black Diamond at his wheel, Thapsin close up. The quarter was made in 0:35 $\frac{3}{4}$. Near the half Black Diamond broke so badly that he lost four lengths, Thapsin passing him. In the straight Marin and Diamond made a brilliant race, Marin getting under the wire a neck to the good, but the judges announced a dead heat on account of a foul by Marin in forcing Black Diamond out of his course. The time for the half, 1:13; mile, 2:25 $\frac{1}{2}$.

Marin led to the quarter in the fifth heat in 0:35 $\frac{1}{4}$, Thapsin being second, Black Diamond quite three lengths behind. He did not improve his position at the half, which was passed in 1:13. In the straight Marin kept his lead and had two lengths to the good of Thapsin, but Marin broke, and Black Diamond, moving in grand style, secured the heat and race by three open lengths, Valentine second, Marin third. Time, 2:26. After the second heat Daisy S was found to be out of form, and her owner was allowed to withdraw her.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 15, 1887.—Purse, \$1,000; 2:23 class. Mile heats, three in five.

Black Diamond, blk. g.—H. Hitchcock	1	1	3	0	1
Marin, b. s.—P. Farrell	5	2	1	0	5
Thapsin, blk. g.—W. F. Smith	2	5	2	3	3
Valentine, br. g.—J. H. Kelly	3	3	4	5	2
Maid of Oaks, ch. m.—A. McDowell	4	4	5	4	4
Daisy S, ch. m.—B. W. Levens	6	6			dr.

Time—2:22 $\frac{1}{4}$; 2:21 $\frac{1}{2}$; 2:22 $\frac{1}{2}$; 2:25 $\frac{1}{2}$; 2:26.

In the third race the 2:30 pacers appeared, represented by Homestake, Lela S, Charley Brown, Fred Ross, Haverly, Arrow, and Bracelet. In the pools Arrow was favorite at \$100, Homestake \$25, Ross \$16, field \$11. The result proved that the spectators knew their horse, although it took two days for him to win their money. Both Arrow and Homestake showed some splendid bursts of speed. Both are young horses, and with proper handling and the stamina which age alone can give, may show many seconds lower than either has yet paced. Homestake won the first heat, leading from wire to wire. He made the quarter in 0:34, and passed the half in 1:09, finishing in 2:21 $\frac{3}{4}$, being eased up from the gate to avoid distancing any of the followers; but Bracelet was shut out in spite of Donathan's generosity. Lela S was second, Brown third, the favorite fifth.

Homestake made another clean sweep in the second heat, leading the whole distance, the quarter in 0:34 $\frac{1}{4}$, half in 1:10; mile 2:16 $\frac{1}{2}$. He could have made it much faster, but was eased up at the finish to let in the stragglers. This time both Lela S and Haverly had to go to the stable, the company being too fast for them.

With two heats to his credit, won in such dashing style, Homestake was made a hot favorite in the pools, selling for \$80 to \$10 for the field. Homestake led off for the third heat and kept his position past the half mile, Arrow second, and as he pressed Homestake the latter broke, and Arrow

passed under the wire with several lengths to spare, Charley Brown being second, Homestake third. Time, 2:21 $\frac{1}{2}$.

Arrow also won the fourth heat with plenty to spare. Homestake having broke badly, could not get nearer than fourth place. Time, 2:22.

The fifth heat was postponed until Saturday, on account of darkness. When rung up at 1 p. m. on Saturday, the pools sold at \$20 for Arrow, to \$18 for the field. The scoring was prolonged almost interminably. After thirteen attempts, Arrow got away with the lead when the gong sounded. He kept it to the quarter in 0:34, reached the half alone in 1:10, and passed under the wire in a fast walk in 2:28.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 15-16, 1887.—Purse, \$600; 2:30 pacers. Mile heats, three in five.

Arrow, b. g.—C. A. Durfee.....	5	2	1	1	1
Homestake, br. g.—G. Van Gordon.....	1	1	3	4	2
Charley Brown, g. g.—H. P. Brown.....	3	4	2	2	3
Fred Ross, b. g.—Eugene Hart.....	4	3	4	3	4
Lela S, br. m.—A. H. Hecock.....	2	dis.			
Haverly, ch. g.—Frank Weber.....	6	dis.			
Bracelet, b. g.—J. R. Hodson.....		dis.			

Time—2:21 $\frac{3}{4}$; 2:16 $\frac{1}{2}$; 2:21 $\frac{1}{2}$; 2:22; 2:28.

SECOND DAY.

The attendance good, the weather pleasant, and the track in fine order. The first race of the regular programme was the Introduction Stake for two-year olds, three quarters of a mile, for which the starters were Snowdrop, Surinam, Lenoke, Katisha, Peel, and Monterey. Snowdrop was the favorite at \$60; Haggin's Stable (Katisha and Monterey), \$18; Surinam, \$8; field, \$9. Through a blunder the horses ran over the course on a false start. Surinam made the running and led with ease at the finish. The judges announced "no race," and the horses were again taken to the starting post and sent off. Surinam won by several lengths, but was disqualified for foul riding, the horses being placed, Katisha, Snowdrop, Peel, amidst mingled growls and rejoicing.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 16, 1887.—Introduction Stake, for two-year olds; \$25 entrance; \$10 forfeit; \$250 added, of which \$50 to second, third to save stake. Winner of any two-year old race this year to carry three pounds, of two or more, five pounds extra. Three quarters of a mile.

Rancho del Paso's b. f. Katisha.....	1
James Garland's ch. f. Snowdrop.....	2
Palo Alto Stock Farm's b. c. Peel.....	3
George Hearst's br. f. Lenoke.....	0
Rancho del Paso's b. g. Monterey.....	0
W. M. Murry's b. c. Surinam.....	0

Time—1:19.

The second race was the California Breeders' Stake for three-year olds, one mile and a quarter. Four faced the starter: Notidle, Jim Duffy, Fred Archer, and Robson. Notidle sold for first choice at \$70; field, \$67 50; Robson, \$60. The four got off in close order, and Notidle, Jim Duffy, and Archer made a fine race, Wildidle's daughter beating Jim Duffy by a neck, in 2:12 $\frac{1}{4}$.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 16, 1887.—California Breeders' Stake, for foals of 1884, to be run at the State Fair of 1887. Entrance, \$50; \$25 forfeit, or only \$10 if declared January 1, 1887; \$300 added; of which \$100 to second, and \$50 to third. One mile and a quarter.

M. F. Tarpey's ch. f. Notidle, by Wildidle.....	1
F. P. Lowell's ch. c. Jim Duffy, by Joe Hooker	2
C. Dorsey's ch. c. Fred Archer, by Thad Stevens.....	3
J. Cabrera's ch. c. Robson, by Joe Hooker	4

Time—2:12½.

The third race was for the Capital City Stake, one mile and five furlongs, for four-year olds. Moonlight, Edelweiss, and Patti were the starters. In the pools they sold in the order of their names for \$60, \$45, and \$35, respectively. Moonlight took the lead from the start, followed by Patti; Edelweiss followed for a mile, then went up and beat Patti, but could never get near Moonlight, and the Thad Stevens filly won easily, never being pressed. Time, 2:54.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 16, 1887.—Capital City Stake, for four-year olds; \$50 entrance; h. f. or only \$15 if declared on or before September first; \$300 added; of which \$100 to second; \$50 to third. Weights, five pounds below the scale; winners of any race over one mile this year, to carry rule weights. One mile and five eighths.

C. H. Eldred's b. m. Moonlight, by Thad Stevens	1
John Wolfskill's br. m. Edelweiss, by Joe Hooker	2
Laurel Wood Stable's b. m. Patti, by Wildidle	3

Time—2:54.

The fourth race was the free purse, mile heats, for which Lizzie Dunbar, Blackstone, Rock, and Manzanita started. Lizzie was a long-distance favorite in the pools, selling at \$60 to \$18 on the field. The first heat Manzanita won by a neck from Lizzie Dunbar, the pair making a fine race. Time, 1:45. Rock, who came in last, bolted, and was not pulled up until he had run three miles, when he was withdrawn. The second heat was a gift to Dunbar, she beating Manzanita by three lengths, and distancing Blackstone. Time, 1:44. The mare won the third heat in a canter in 1:47¾.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 16, 1887.—Free purse, \$250, for all ages; of which \$50 to second. Winners of any race this year of the value of \$300, to carry five pounds; maidens allowed, if three years old, five pounds; if four years old or upwards, fifteen pounds. Mile heats.

W. L. Pritchard's ch. m. Lizzie Dunbar (6), by Bazaar.....	2	1	1
J. Cabrera's ch. g. Manzanita (8)	1	2	2
F. Depoister's br. c. Blackstone (3), by Wildidle	3	dis.	
W. P. Todhunter's ch. g. Rock (5), by Bob Woolley.....	4	dr.	

Time—1:45; 1:44; 1:47¾.

THIRD DAY.

The weather was cold but pleasant: the track in fine order, the attendance large. The first race on the card of the day was the two-year old trotting stake. Of the eighteen nominated but two appeared: Grandee, the representative of the San Mateo Stock Farm, and Memo, from Mr. Valensin's stable. There were no pools sold on the race, Grandee having beaten Memo for the two-year old stakes, at the meeting of the Golden Gate Fair Association, with the greatest ease.

In the first heat Grandee went off with the lead and trotted in that perfect style which has won him so much just praise, finishing with many lengths to the good, in 2:33 $\frac{1}{4}$. In the second half Goldsmith drove him to the quarter in 0:34, and reached the half in 1:12 $\frac{1}{2}$, but he eased the colt up over the rest of the distance, coming down almost to a walk in 2:37 $\frac{3}{4}$.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 17, 1887.—Two-year old trotting stake; \$50 entrance, of which \$10 must accompany nomination; \$15 payable July first, and remaining \$25 payable August 10, 1887; \$300 added by the society. Mile heats.

Grandee, b. g., by Le Grand—San Mateo Stock Farm.....	1	1
Memo, blk. c., by Sidney—G. Valensin.....	2	2

Time—2:33 $\frac{1}{4}$; 2:37 $\frac{3}{4}$.

The second race, 2:27 class, had for starters, Jane L, Maid of Oaks, Luella, Mt. Vernon, Bay Rose, and Kate Ewing. Jane L has been performing with even excellence quite recently. She is a beautiful mare and moves with consummate ease. She was backed in the pools for \$60 against \$12 for Kate Ewing and \$20 for the field. So confident was her driver of her ability to win whenever he chose to call upon her, that he trotted her leisurely around the track for the first heat and gracefully brought up the rear.

In the second heat she was content with second place, following Maid of Oaks home, she having also won the first heat. Then Jane L stepped out and won the third, fourth, and fifth heats without an apparent effort.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 17, 1887.—Purse \$1,000; 2:27 class. Mile heats, three in five.

Jane L, br. m., by Hambletonian Mambrino—L. B. Lindsay.....	6	2	1	1	1
Maid of Oaks, ch. m., by Duke McClellan—A. McDowell.....	1	1	2	2	3
Luella, br. m., by Chickamauga—H. Hitchcock.....	3	3	3	3	2
Mt. Vernon, b. s., by Nutwood—J. A. McCloud.....	5	4	4	4	4
Bay Rose, by Sultan—J. N. Ayres.....	4	5	dis.		
Kate Ewing, br. m., by Berlin—Lee Shaner.....	2	dis.			

Time—2:27 $\frac{1}{2}$; 2:23 $\frac{3}{4}$; 2:24 $\frac{1}{2}$; 2:29 $\frac{1}{2}$; 2:27 $\frac{1}{2}$.

The day's sport closed with the special trot for named horses, the starters being Wallace G, Flora G, Rosie Mc, Florence R, and Pasha. Florence R was made a favorite in the pools. In the first heat she came in last, and her driver was changed, and she was distanced in the next attempt. Wallace G won in three straight heats.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 17, 1887.—Special purse, \$500, for named horses. Mile heats, three in five.

Wallace G.....	1	1	1
Flora G.....	2	3	3
Rosie Mc.....	3	4	2
Florence R.....	4	2	dis
Pasha.....	dis.		

Time, 2:27 $\frac{1}{2}$; 2:27 $\frac{1}{4}$; 2:26 $\frac{1}{2}$.

FOURTH DAY.

The weather was fine, track fast, and a large attendance. The day was taken up with running races, of which the first was the Premium Stake, for all ages, three quarters of a mile. There were seven starters—Daisy D, Notidle, Edelweiss, Johnny Gray, Kenney, Carmen, and Grover Cleveland. The latter behaved so badly at the post that the start was delayed half an hour, and when the flag fell Cleveland was left standing. He was a firm favorite before the start, and his bad temper doubtless lost a good deal of money for his supporters. Gray got off first, closely followed by Daisy D and Carmen, and the three made a fine race into the straight. Then Kenney came up with a rush, and head and head he and Daisy D passed under the wire, the mare having the best of it, Notidle being third. Cleveland far in the rear.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 19, 1887.—The Premium Stake, for all ages; \$50 entrance; half forfeit; or only \$15 if declared on or before September first, with \$300 added, of which \$100 to second, third to save stake. Horses that have started and not won this year, allowed five pounds. Maidens, if three years old, allowed five pounds; if four years old or over, seven pounds. Three quarters of a mile.

Cockrill Bros.' b. m. Daisy D, (5), by Wheatley	1
Rancho del Paso's b. g. Kenney, (5), by Duke of Montrose	2
M. F. Tarpey's ch. f. Notidle, (3), by Wildidle	3
Owen Bros.' g. g. Johnny Gray, (aged), by Shiloh	0
Laurel Wood Stables' ch. f. Carmen, (2), by Wildidle	0
John Wolfskill's br. f. Edelweiss, (4), by Joe Hooker	0
M. Storns' ch. c. Grover Cleveland, (4), by Monday	0

Time—1:15½.

The second race was the California Annual Stake, for two-year olds. One mile. Surinam, Snowdrop, and Peel were the starters. Snowdrop sold for \$50 in the pools against \$15 for Surinam, and \$2 for Peel. Snowdrop was reluctant to start, but when she got off it was on even terms with Surinam. The pair raced together the whole distance to the straight, but headed for home the colt had the best of it, and won by a length. Peel did not make a good showing. A protest was made against Surinam for a foul and allowed, the race being given to Snowdrop, Peel second. This is the third time that Surinam, after beating his field, has been disqualified for foul riding, all three within a fortnight.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 19, 1887.—California Annual Stake, for foals of 1885; \$100 entrance; \$25 forfeit, or only \$10 if declared January 1, 1887; with \$250 added, of which \$100 to second, \$50 to third. One mile.

James Garland's ch. f. Snowdrop, by Joe Hooker	1
Palo Alto Stock Farm's b. c. Peel, by Monday	2
W. M. Murry's b. c. Surinam, by Joe Hooker	3

Time—1:42¾.

The third race, for the La Rue Stake, two miles and a quarter, brought a good field of seven, all stayers; John A. Narcola, Adeline, Moonlight, Laura Gardner, and Patti have each done well over a distance. The betting was very active. Moonlight, \$120; Adeline, \$90; Laura Gardner, \$65; John A, \$45; field, \$40.

John A set the pace, leading for a mile and a half: they were all in close company when passing into the stretch for the last time, and going in grand style. Adeline had the most speed left, and with her light weight drew away and finished a very fast race in 3:59.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 19, 1887.—The La Rue Stake, handicap, for all ages: \$100 entrance; \$50 forfeit; with \$500 added; of which \$150 to second; \$100 to third. Weights announced September tenth. Declaration, \$20, to be made with the Secretary by eight o'clock p. m., September twelfth. In no event will declaration be received unless accompanied with the amount fixed. Two and one quarter miles.

D. J. McCarty's ch. f. Adeline (3), by Enquirer	1
M. Storns' b. m. Narcola (5), by Norfolk	2
D. J. McCarty's ch. f. Laura Gardner (3), by Jim Brown	3
C. H. Eldred's b. m. Moonlight (4), by Thad Stevens	0
G. W. Trahern's b. g. Dave Douglas (aged), by Leinster	0
Laurel Wood Stable's b. m. Patti, by Wildidle	0
H. Whiting's blk. h. John A (aged), by Monday	0

Time—3:59.

The selling purse, one mile and a furlong, had eight starters, for which pools sold at \$50 for Mayblossom, \$32 for Sir Thad, \$25 for Tom Daly, and \$47 for the field. They got off well together; at the half-mile Tom Daly came out of the ruck and won as he liked in 1:57 $\frac{1}{4}$, Bolero second, the favorite third.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 19, 1887.—Selling purse, \$250, of which \$50 to second. Fixed valuation, \$1,000; two pounds for each \$100 below; two pounds added for each \$100 above fixed value. One mile and an eighth.

Rancho del Paso's ch. g. Tom Daly	1
Laurel Wood Stables b. c. Bolero	2
W. P. Todhunter's b. m. Mayblossom	3
P. Riley's b. h. Sir Thad	0
W. P. Todhunter's ch. g. Rock	0
James Garland's ch. c. Elwood	0
E. Flitner's b. s. Oscar Wilde	0
Frank Dodge's b. g. Bay Rum	0

Time—1:57 $\frac{1}{4}$.

FIFTH DAY.

There was an improved attendance over the four preceding days. The weather was delightful, and the track, as usual, in excellent condition. The first event on the day's card was the three-year old trotting stake, from which Ella, Soudan, Sable Wilkes, and Shamrock were barred. The entries announced were Dubec, Maiden, Flora M, and John C. Shelley, but only the last named appeared and he had a walkover for the entrance and forfeit moneys.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 20, 1887.—Three-year old trotting stake. For all colts except Ella, Soudan, Shamrock, and Sable Wilkes. \$100 entrance, of which \$25 must accompany nomination; \$25 payable July first, and remaining \$50 payable August 10, 1887; \$400 added by the society. Mile heats, three in five.

John C. Shelley, b. c., by Hawthorne—H. Whiting----- w. o.

The second number was a special pacing purse for named horses. The starters were Charley Brown, Ella S, Billy Bunker, Bracelet, and Pocahontas, for which the price in the pools was Ella S \$100, Charley Brown \$16, field \$10; the odds in favor of Ella S showing how strongly she was fancied by the talent. She proved that the confidence of her backers was well founded, the fate of their money being never in doubt throughout the progress of the three heats. The mare had her field at her mercy from start

to finish, and won as she liked, the time for the first and second heats being good.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 20, 1887.—Special purse, \$100, for named pacers.

Ella S, r. m.—A. C. Smith.....	1	1	1
Billy Bunker, blk. g.—D. Sayer.....	2	2	4
Charley Brown, g. g.—H. P. Brown.....	3	4	2
Bracelet, b. g.—J. R. Hodson.....	4	3	3
Pocahontas, ch. m.—J. A. Goldsmith.....			dis.

Time—2:21½; 2:20½; 2:24½.

The three-minute class were the next horses on the programme, for which Allo, Perihelion, and Rosie Mc appeared. It did not take long to find the favorite, Dr. Davenport's fine young horse by Altoona being selected. His price was \$40 against \$10 for Perihelion and \$5 for the field: the result proving that the starters were sized up accurately. Allo won in three straight heats, Perihelion being second in the first and second heats. This result looked so much like a moral certainty from the start, that both interest and excitement were lacking during the race.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 20, 1887.—Purse, \$800; 3:00 class. Mile heats, three in five.

Allo, br. s., by Altoona—Dr. Davenport.....	1	1	1
Perihelion, b. g., by Admiral—J. A. Goldsmith.....	2	2	3
Rosie Mc, b. f., by Alex Button—George W. Woodard.....	3	3	2

Time—2:29¼; 2:27¼; 2:29½.

The closing race of the day was the 2:20 class, for which four started—Lot Slocum, Stamboul, Sister, and Menlo. The betting could not be called speculation, for the result, like its predecessors, was a foregone conclusion, barring accidents. The horses sold at \$200 Slocum, \$60 Stamboul, \$24 Sister, and \$15 Menlo, the exact order in which the race was finished. Slocum was practically barred after the first heat; the time shows that he was never pushed but had seconds to spare in each heat. With Slocum out of the race, Stamboul would have overtopped his field, so that there was practically no interest in the contest, Slocum carrying off the three heats in one-two-three order, and in slower time than he made recently at the Golden Gate meeting.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 20, 1887.—Purse, \$1,200; 2:20 class. Mile heats, three in five.

Lot Slocum, b. g., by Electioneer—Lee Shaner.....	1	1	1
Stamboul, b. s., by Sultan—L. J. Rose.....	2	2	3
Sister, b. m., by Admiral—J. A. Goldsmith.....	3	3	2
Menlo, b. s., by Nutwood—Wm. Dwyer.....	4	4	4

Time—2:22; 2:19; 2:21.

SIXTH DAY.

The attendance for the sixth day eclipsed all previous gatherings at the present meeting. The races were watched with great interest, the betting was active, the weather was pleasant, and it is almost needless to add that the track was in fine condition. The Sunny Slope Stake, for two-year old fillies, five furlongs, was the opening event on the programme.

The starters were: Rosedale, Sally Hamilton, Katisha, and Lenoke. In the pools Rosedale brought \$60, Katisha \$30, and the field \$14. Lenoke made the running. At the half Rosedale was close up, but the Shannon filly was too good for her, and won in fine style by a length, Katisha third, the fielders having a general jollification over the result.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 21, 1887.—The Sunny Slope Stake, for two-year old fillies; \$25 entrance; \$15 forfeit, or only \$10 if declared on or before September first; \$150 added, of which \$25 to second. Those that have started and not run first or second in any race this year, allowed five pounds. Five eighths of a mile.

George Hearst's br. f. Lenoke, by Shannon	1
J. B. Chase's ch. f. Rosedale, by Joe Hooker	2
Rancho Del Paso's b. f. Katisha, by Kyrle Daly	3
G. W. Trahern's b. f. Sally Hampton, by Boots	0

Time—1:04.

For the Shafter Stake, for three-year olds, one mile and a quarter, five started—Jack Brady, Agnes, Fred Archer, Applause, and Elwood. Pools sold with Agnes as favorite at \$50, Archer \$20, field \$25. Again the short enders had a triumph, Jack Brady winning, with Fred Archer second.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 21, 1887.—The Shafter Stake, for three-year olds; \$50 entrance; \$25 forfeit, or only \$15 if declared on or before September first; with \$300 added; of which \$100 to second; third saves stake. Winner of any race this year to carry five pounds extra; of two or more, ten pounds. Maidens allowed five pounds. One mile and a quarter.

Davis Bros.' b. c. Jack Brady, by Wildidle	1
C. Dorsey's ch. c. Fred Archer, by Thad Stevens	2
Rancho Del Paso's ch. f. Agnes, by Onondaga	3
Thos. G. Jones' b. g. Applause, by Three Cheers	0
James Garland's ch. c. Elwood, by Norfolk	0

Time—2:12½.

The Del Paso Stake was the next event, heats of three quarters of a mile, for which Adeline, Johnny Gray, Acton, and Grover Cleveland faced the starter. Cleveland was made a very hot favorite in the pools, selling for \$200, Adeline \$45, field \$20. Such odds are remarkable on a California course, especially when such a good filly as Adeline is in the race under anything like favorable conditions. Gray got off with a good lead, Adeline second, Cleveland going easily under a steady pull. When in the straight Cleveland was given his head, and he soon passed the leaders, winning easily by four lengths; Gray second; Adeline third; Acton distanced. Time, 1:16. The result made Cleveland a still warmer favorite; he sold at \$100 against \$10 on the field. In the second heat Adeline started off at a killing pace, and made the running all the way, passing under the wire three lengths ahead of Cleveland, who had passed Johnny Gray in the run for home. Time, 1:15. In the third heat Cleveland got off well, ran the distance in fine form, Adeline never being near him. Time, 1:15¼.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 21, 1887.—The Del Paso Stake, for all ages; \$50 entrance; \$25 forfeit, or only \$15 if declared on or before September first; with \$300 added, of which \$100 to second; third saves stake. Three-year olds to carry 100 pounds; four-year olds 110 pounds; five year olds and upward 112 pounds; sex, but not heat, allowances. Three-quarter mile heats.

M. Storns' ch. c. Grover Cleveland (4), by Monday	1	2	1
D. J. McCarty's ch. f. Adeline (3), by Enquirer	3	1	2
Owen Bros. g. g. Johnny Gray (aged), by Shiloh	2	3	r.o.
Rancho del Paso's b. g. Acton (3), by Kyrle Daly	dis.		

Time—1:16; 1:15; 1:15½.

The fourth race was the free purse for all ages, one mile. The starters were Stanley, Kenney, Monterey, Cannie Scot, Elwood, Oro, and Notidle. The Rancho del Paso pair, Monterey and Kenney, sold as first choice in the pools at \$70, Notidle brought \$60, and the field \$55. Monterey was first away, and he opened a wide gap at the first quarter. At the straight he held his lead, with his stable companion second. Notidle came up and passed Monterey but could not overhaul Kenney. The latter, while running easily for the finish, found Cannie Scot at his girth, and in a second the Leinster colt had beaten Kenney by a head, amidst the greatest excitement. Time, 1:44. And the fielders for the third were made jubilant.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 21, 1887.—Free purse, \$300, for all ages, of which \$50 to second. Horses that have started and not won this year allowed ten pounds. Winners this year of any race of the value of \$400 to carry five pounds extra. Winner of No. 7, ten pounds extra. One mile.

W. L. Pritchard's ch. c. Cannie Scot (2), by Leinster	1
Rancho del Paso's br. g. Kenney (3), by Duke of Montrose	2
M. F. Tarpey's ch. f. Notidle (3), by Wildidle	3
Rancho del Paso's b. g. Monterey (2), by Kyrle Daly	0
Owen Bros. b. c. Oro (3), by Norfolk	0
J. Garland's ch. c. Elwood (3), by Norfolk	0

Time—1:44.

SEVENTH DAY.

There was a fine attendance, beautiful weather, and the track in fine order. The card for the day was headed by the trotting purse, 2:25 class, for which seven started—Mt. Vernon, Woodnut, Marin, Jane L, Maid of Oaks, Longfellow, and Bay Rose. In the pools Woodnut sold for first choice \$50, \$25 for Jane L, \$20 for Marin, and \$10 for the field. The first heat was fought out by Jane L and Woodnut, the others not being in it at any time. At the half-mile Jane L had the best of it. From there to the finish the chestnut son of Nutwood changed the appearance of things and passed under the wire first with a lead of two lengths, in fast time, 2:21¾. Longfellow, Maid of Oaks, Mt. Vernon, and Marin following, Bay Rose failing to save his distance.

In the second heat both Jane L and Woodnut broke before reaching the half-mile post. This gave Longfellow the lead. He kept it to the straight, where Woodnut came up and pressed him hard. Longfellow broke and gave Woodnut the heat in 2:23¼, Maid of Oaks third, Jane L fourth, Marin fifth, Mt. Vernon last.

Before the third heat betting was very active, Woodnut \$100, Jane L \$40, Marin \$20, field \$20. Charles Marvin taking the seat behind Jane L

made the race more interesting to watch. There was an excellent start, and an exciting race all through the heat. Jane L, while leading near the quarter mark, broke, and Longfellow went to the front, but Woodnut went up in fine form and took first place. Then came Jane L's turn. She made her way close up to the favorite, the pair making a most exciting race in the straight, but the horse was too steady for Jane L and she broke, giving the heat and race to Woodnut in 2:22½, Marin third, Longfellow fourth.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 22, 1887.—Purse \$1,000; 2:25 class. Mile heats, three in five.

Woodnut, ch. s., by Nutwood—B. C. Holly	1	1	1
Jane L, br. m., by Hambletonian Mambrino—L. B. Lindsay	2	4	2
Longfellow, ch. g., by Hambletonian—H. W. Seale	3	2	4
Maid of Oaks, ch. m., by Duke McClellan—A. McDowell	4	3	5
Marin, b. s., by Quinn's Patchen—P. Farrell	6	5	3
Mt. Vernon, b. s., by Nutwood—J. A. McCloud	5	6	6
Bay Rose, b. s., by Sultan—J. N. Ayres			dis.

Time—2:21¾; 2:23½; 2:22½.

The second race was the four-year-old trotting stake, for which three appeared—Tempest, Clifton Bell, and Rosie Mc. In her previous races Tempest had shown a splendid style and great speed, hence she was made a hot favorite, selling in the pools for \$50 against \$25 for the field. The race proved that her supporters knew what they were about when they backed her so readily; she won in three straight heats, the others failing to press her at any time.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 22, 1887.—Four-year-old trotting stake; \$100 entrance, of which \$25 must accompany nomination; \$25 payable July first, and \$50 payable August 10, 1887; \$400 added by the society. Mile heats, three in five.

Tempest, b. f., by Hawthorne—H. Whiting	1	1	1
Clifton Bell, b. c., by Electioneer—Palo Alto Stock Farm	3	2	2
Rosie Mc, by Alex Button—G. W. Woodard	2	3	3

Time—2:26; 2:25½; 2:23½.

The third race was the race of the day, and in many respects the event of the meeting. It was the free for all pacers. Three starters appeared; the first, L. C. Lee, is the great Denver pacer who had frightened off so many pacers here. The second, Arrow, had done some wonderful work at Marysville, and had beaten Homestake in the 2:30 class on the opening day of the meeting, forcing the latter to a 2:16½ gait in the second heat, and then beating him out in good time in the third, fourth, and fifth heats. Of Killarney's chances no one thought very much. In the pools Lee sold for \$120, Arrow's supporters running him up to \$90, Killarney's price being \$5. In the first heat Arrow went off at a terrific pace, leading to the quarter in 0:33, passing the half in 1:08. He kept his lead by two lengths to the finish, and won, in 2:15½, one of the most wonderful heats on record for so young a horse. With such a performance the betting swerved round at once; Arrow sold for \$225 against \$100 for the field. In the second heat Arrow repeated his previous performance up to the half, the quarter being marked at 0:33, the half at 1:07½. Lee broke badly and Arrow passed under the wire in a jog in 2:19¼, Killarney six lengths behind, and Lee much further.

In the third heat there was a collision at the turn, which caused Arrow to break badly, and he did not recover from it, Killarney and Lee getting a lead of more than one hundred yards. In the straight Killarney broke

and Lee won. Arrow coming up in time to save his distance. Time, 2:24. In the fourth heat Arrow got off in fine style; Killarney was second at the half, where Lee broke so badly that his driver could not get him to pace again. Arrow won the heat in 2:16½, Killarney second, Lee distanced.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 22, 1887.—Purse, \$800. Pacing, free for all. Mile heats, three in five.

Arrow, b. g., by A. W. Richmond—Durfee & Covarrubias.....	1	1	3	1
Killarney, br. s., by Black Ralph—P. Fitzgerald.....	3	2	2	2
L. C. Lee, blk. s., by Elmo, Jr.—H. Hitchcock.....	2	3	1	dis.

Time—2:15½; 2:19¼; 2:24; 2:16½.

The fourth race was a special purse for named horses. Thapsin, Artist, Valentine, and Luella being the starters. In the pools, Valentine sold for \$50, Thapsin for \$35, Luella \$25, \$15 for Artist. In the race Thapsin proved himself much better than his supporters imagined: he won in three straight heats: he and Valentine made a good race of it, but Thapsin always had just enough speed and steadiness left to win from his competitor, Luella never being in. She broke at the first turn in the first heat, and was distanced.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 22, 1887.—Purse, \$400. Special trotting race, for named horses. Mile heats, three in five.

Thapsin.....	1	1	1
Valentine.....	2	2	2
Artist.....	3	3	3
Luella.....			dis.

Time—2:23¼; 2:23¾; 2:25.

EIGHTH DAY.

The first race on the programme was the California Derby, stake valued at \$1,200, for foals of 1884, one mile and a half.

The track was in excellent condition. The starters were Robson, Laura Gardner, and Jim Duffy. Pools sold: Duffy \$70, Laura Gardner \$36, Robson \$15. The horses behaved well, and were tapped off at the first attempt, with Robson in the lead, Laura second, Duffy on the saddle-girth. Duffy took the second place at the seven-eighths pole. A half mile was run with Robson leading, Duffy and Laura two lengths back, neck and neck. On the lower turn Laura, who was in poor condition, fell to the rear. At the quarter Robson and Duffy were coming at a tremendous pace, neck and neck, positions they held to the drawgate, both jockeys vigorously plying their whips. The race was close and exciting, Duffy winning by a nose in 2:40¼.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 23, 1887.—California Derby Stake, for foals of 1884. One mile and a half.

F. P. Lowell's ch. c. Jim Duffy.....	1
J. Cabrera's ch. c. Robson.....	2
Laurel Wood Stable's ch. f. Laura Gardner.....	3

Time—2:40¼.

The next race was a dash of one mile, for two-year olds, for the Palo Alto Stake. It was closed with a large number of entries, but only two came to the score—Gorgo and Bolero. In the pools Gorgo sold for \$100 to Bolero's \$25. After two unsuccessful attempts, the colts got a good send-off, Gorgo leading and gradually gaining to the finish, winning handily by several lengths in 1:43 $\frac{3}{4}$.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 23, 1887.—Palo Alto Stake, for two-year olds. One mile.

Palo Alto Stock Farm's b. f. Gorgo.....	1
D. J. McCarty's b. c. Bolero	2

Time—1:43 $\frac{3}{4}$.

The next was a mile and three-quarter dash for three-year olds, between Narcola, Notidle, and Elwood. Narcola was a large favorite in the pools, bringing \$100 for \$35 for the other two. The talent was right again, for the favorite took the lead at the start and maintained it to a finish, winning in 3:08, Notidle second, and Elwood third.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 23, 1887.—Golden Gate Stake, for three-year olds. One mile and three quarters.

Matt. Storns' b. m. Narcola.....	1
M. F. Tarpey's ch. f. Notidle.....	2
James Garland's ch. c. Elwood	3

Time—3:08.

One of the prettiest races of the day was the Nighthawk Stake of one mile. There were eighteen entries, and \$300 added, and \$200 additional if 1:41 $\frac{1}{4}$ was beaten, and the stake to be named after the winner, if Nighthawk's time (1:42 $\frac{3}{4}$) was beaten. The contestants were six in number, and started in the following order: Adeline, Edleweiss, Agnes, Kenney, Ed McGinness, and Lizzie Dunbar. This was a pool selling race, and a large amount went into the pool-box at about the following odds: McGinness \$100, Lizzie Dunbar \$60, Adeline \$40, field \$35. The horses went well together to the half, with Adeline in the lead; after turning into the home-stretch Lizzie Dunbar came to the front and passed over the score an easy winner by several lengths in 1:42 $\frac{3}{4}$. The Judges announced that Edelweiss won the heat, Adeline second, Agnes third, and distanced Lizzie Dunbar for foul riding. Lizzie is as fine an animal as has been shown up on the track this season. She is by Bazaar; dam, Tibbie Dunbar, and was bred by W. L. Pritchard, of Sacramento.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 23, 1887.—The Nighthawk Stake, for all ages. One mile.

John Wolfskill's br. m. Edelweiss.....	1
D. J. McCarty's ch. f. Adeline.....	2
Rancho Del Paso's ch. f. Agnes.....	3
H. L. Samuels' b. c. Ed. McGinness.....	0
Rancho Del Paso's br. g. Kenney.....	0
W. L. Pritchard's ch. m. Lizzie Dunbar.....	0

Time—1:42 $\frac{3}{4}$.

The last race of the day was a running, free purse, one mile and a sixteenth and repeat, or all ages, between Dave Douglas, Oro, Manzanita,

Patti, Elwood, and Moonlight. Pools sold: Patti \$100, Manzanita \$90, field \$75.

The horses were sent off very evenly on the first attempt. Dave Douglas and Oro came under the wire so nearly together that it was called a dead heat, in 1:51½. Dave Douglas won the second heat in 1:51½. The third was a dead heat between Patti and Douglas in 1:51½, Oro, Manzanita, and Elwood distanced, Moonlight sent to the stable under the rule. Patti took the fourth heat from Douglas by three lengths. It was now half-past six o'clock, and the race was postponed until one o'clock p. m. the next day.

NINTH DAY.

The attendance at the track Saturday was not so large as that of the day before. The first event was the postponed race, mile and a sixteenth, for which Patti and Dave Douglas had each a heat and a dead heat to their credit. The betting was very lively, with \$100 to \$45 on the mare, but an offer to accept \$250 on Patti against \$100 made Douglas sell higher in the pools. Once again did Dave take up the running, and he led by half a length at the half-mile post, and thence a slashing race ensued, the horses being neck and neck at the drawgate, but Dave Douglas outlasted the mare, and won in 1:50½.

The talent made heavy losses on this race, as Patti's success was looked upon as a foregone conclusion.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 23-24, 1887.—Running; free purse, \$250; for all ages. One mile and one sixteenth and repeat.

G. W. Trahern's b. g. Dave Douglas	3	2	0	1	1
Laurel Wood Stable's b. f. Patti	0	1	0	2	2
C. H. Eldred's b. f. Moonlight	5	3	sta.		
J. Cabrera's ch. g. Manzanita	0	6	dis.		
James Garland's ch. c. Elwood	4	5	dis.		
Owens Bros' b. s. Oro	6	4	dis.		

Time—1:51½; 1:51½; 1:51½; 1:54; 1:50½.

Next came a match race for \$500, between Bryant W (130 pounds) and Franklin (105 pounds), one mile. The betting was \$50 to \$20 on Bryant, whose rider made a waiting race, and so allowed Franklin to open a big gap, and when he tried to move up there was no response on the part of Bryant W, so Franklin won in 1:47—another fall for the talent.

Sable Wilkes then walked over for the entries in the special three-year old trotting stakes, making the mile in 2:27¼.

Then came the principal event of the day, a purse for \$1,500, for which Arab sold for \$20, with \$75 for Adair and \$55 for Lot Slocum. Arab got away first with his neat telling stride, with Slocum in close attendance, and thus they passed the half-mile post in 1:09½. Then Slocum moved up, and when on even terms at the drawgate the pace was too hot for him, carrying him to a break, so Arab won by four lengths in 2:18.

After this heat there was a great revulsion in the betting. Arab was taken first choice at \$80, when Adair was run up to \$160 as second choice, with only \$30 on Lot Slocum. In this heat Arab with Hickok, and Lot Slocum with Lee Shaner, stubbornly contested for honors throughout the entire mile, while Goldsmith with Adair was trailing. Arab and Slocum trotted head and head for almost the entire distance, and finally Slocum

won, after a punishing finish, by a scant neck, in 2:17½, the half mile being made in 1:09¼.

Evidently there was a moneyed organization whose members were bound to make Adair win the race if coin could do the trick, for he brought \$170 against \$40 for Slocum and only \$35 for Arab, and even at such long odds against two such excellent public performances but few were willing to bet against Adair and his boom.

The third heat gave no development on the Adair deal, as when he made an effort to obtain foremost position during the mile he was too unsteady to do it, so Slocum and Arab had it all for themselves again, being nip and tuck all the way round. Arab finally outlasting Slocum by a length in 2:17½, Adair being a poor third. The result of this showing caused a great many comments by those who had invested so heavily in Adair's chances. In accordance with the wish of many of his backers, Goldsmith was displaced by Dustin in charge of Adair, but it was of no avail in changing the fortunes of the day, as Arab carried Adair to a run on the backstretch, taking the lead. Arab handily won the heat and race in 2:20, Adair a fair second, and Slocum last, but taking second money of the purse.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 24, 1887.—Trotting purse, free for all; purse, \$1,500. Mile heats, three in five.

Arab, b. g.—O. A. Hickok	1	2	1	1
Lot Slocum—Lee Shaner	2	1	2	3
Adair, b. g.—W. F. Smith	3	3	3	2

Time—2:18; 2:17½; 2:17½; 2:20.

Then came a trot for the mere entries in the 2:40 class, which was virtually a walkover for Old Nick, who won in straight heats from Manzanita in the easiest manner, in 2:26, 2:25¼, 2:26½.

The final event was a purse of \$600 for named horses, for which Thapsin sold for \$50, Marin \$22, Longfellow \$16, and the field \$25, in which was the winner. Thapsin and Marin contested the heat for nearly three quarters of a mile, when Luella came up on the homestretch, but could not quite reach Thapsin, he winning by a length in 2:25¼, Longfellow third, Marin fourth, and Valentine fifth.

The next heat was all between Thapsin and Longfellow, resulting in favor of the former in 2:23, Valentine third.

It was now \$100 to \$30 on Thapsin, who, however, was tiring out, while Luella looked fresh and dangerous. The three succeeding heats were admirably contested by Luella and Longfellow, for although Thapsin showed in front at the half-mile post, Luella and Longfellow got away from him, and Luella won the third, fourth, and fifth heats in 2:23½, 2:23¾, and 2:27, Longfellow being an excellent second on each occasion. It was almost dark when the day's proceedings were brought to a close.

SUMMARY.

CALIFORNIA STATE FAIR, SACRAMENTO, September 24, 1887.—Trot, mile heats; purse, \$600; for named horses.

Luella, b. m.—H. Hitchcock	2	4	1	1	1
Thapsin, blk. g.—W. F. Smith	1	1	3	4	3
Longfellow, ch. g.—H. W. Seale	3	2	2	2	2
Marin, b. s.—P. Farrell	4	5	5	3	4
Valentine, b. g.—J. H. Kelly	5	3	4	5	5

Time—2:25¼; 2:23; 2:23½; 2:26; 2:27.

OPENING ADDRESS

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY AT SACRAMENTO, CALIFORNIA, ON THURSDAY EVENING, SEPTEMBER 15, 1887.

By HON. J. G. SWINNERTON, of Stockton.

MR. PRESIDENT, LADIES AND GENTLEMEN: I am afraid that the introduction of your President has been somewhat pretentious. I am very much afraid that if I were to attempt to deliver an address on agriculture that I should come out as an agricultural Governor of Indiana once did, who had been elected to the chair of State chiefly through the influence of the farmers, and he considered it his duty under the circumstances to make himself entirely solid with the agricultural interests. He had not been very long in the chair of State before one of his constituents wrote to him to know of his opinion on hydraulic rams, and he wrote back to him thus: "Your letter respecting hydraulic rams has been received and contents noted. In reply I wish to state that this is an animal upon which I have devoted a great deal of cultivation. I consider it the best in the world. It is better than the southdown for mutton and better than merino for wool." [Laughter.] I have no desire, I have no time, I have no opportunity, I have no ability to enter upon a discussion of the course of the developments of the agricultural interests of the State of California; but if I had such time, if I had such opportunity, if I had such ability, I am afraid that I would not do it. I have sat for one hour in this part of the building, and I have been permitted to observe the wonderful exhibits that are spread out here before me, and if I had any speech to make at all, if I had any inspiration at all, if I had any language at all, if I had any thought at all, they would necessarily, by virtue of my surroundings, center upon the topic of the sovereignty of man. In spite of all that has been said to the contrary, in spite of all that has been written, in spite of all that has been sung, we must believe that there existed some time in remote antiquity a primitive man. One of our greatest American poets has depicted an old man at the close of a career of study and labor, who had devoted all his life to the science of alchemy, who had endeavored to find a universal solvent. He had spent days, weeks, months, and years, in the hope that he might be able to read the stars and forecast events in human life. He had spent his whole lifelong in endeavoring to discover a secret by which he might transmute base metals into gold: and when all had been done, and he lay upon his death bed, he attempted to keep the flickering lamp of life burning by stimulants which he had discovered, to no avail. He complained against the Almighty, because He had set a boundary and a limit to human effort by means of death. And the poet makes him say:

Aye, were not man to die, but were to occupy half this narrow sphere;
Could he but live and brood the knowledge here;
Could he but watch the mystic word and hour,
Only his Maker could transcend his power.

Earth has no mineral strange, illimitable air no hidden wings,
 Water no qualities in covert springs,
 Season no mystery, and the stars no spell
 Which the innermost soul might not compel.

And here and now in our presence, by virtue of two devices, that which the alchemist complained against is removed. It is possible for man to carry on, it is possible for man to reach out into ages past, it is possible for man to make all that is undeveloped into one continued symmetrical, perfect human life. These two devices are the figures 1, 2, 3, 4, 5, 6, 7, 8, 9, and the twenty-six letters of the alphabet. By virtue of the powers themselves, there are no human efforts so great, there are no acts of man so magnetic, there are no inspirations so grand, there are no human developments that might not be carried down to the very last syllable of recorded time. But there was such a thing as a primitive man. We can trace his footprints as he lived upon the sands of time. He was covered with hair, his finger-nails were first long and then became claws. His hair was matted over his eyes, which served to protect them from the assault of his enemies and to keep the dust and dirt out of them. In daytime he wandered the earth, and the only machine and all the implement he had was a sharpened stick. At night he crawled among the rocks, doubled himself up like a bear or wolf, and slept. In the morning he walked out from his cave, and he gathered snakes, toads, lizards, and ate them, because he had not the capacity to control, nor the power to capture any animal higher in the scale of animal existence. And yet within the brain of that primitive man there existed potential energies of everything that we see before us here, and everything that the human family has ever accomplished since. As the acorn contains within itself the potential energies of the oak that shall stand the tempest and rage of centuries, so within the indurate and brutalized brain of that primitive man there existed the potential energies to develop everything that has been discovered, wrought out, and perfected since. It is a majestic thought that all the progress, all the energies, all the invention, all the power that man exercises at this day, existed years, and thousands and thousands of years ago, in the brain of a primitive man. And I say, if it were my duty to-night to follow that line of argument, it would be pleasant to trace the progress of humanity from the hair-covered, long-nailed, chattering, brutalized human being, that existed in the remote ages, up to the highest and most perfect developed of humanity before us now.

It would be a most marvelous thing to find out how this reasoning sentient thing ever could exist a human, a potential thing that would develop itself to this extent. I cannot do that. I am here for the purpose of making a speech. I am here for the purpose and in behalf of the Directors of the State Agricultural Society to welcome you all. Welcome to the feast of reason and flow of soul, which you yourself have prepared and have provided, and have committed to their keeping. We may go farther down and trace out the development of our own Golden State, of which we are so excessively proud. I believe if I opened that subject a discussion would be an apostrophe to the city in which this exhibition is held. I remember almost the first words that I ever heard and have knowledge of, were the city of Sacramento. There was a time, when all over the length and breadth of our land the city of Sacramento was known, the name was known, the people were known—the people who broke down the barriers that walled in savagery and kept it from the gaze of civilization. But there was no man that ever thought, or had reason to think, in those remote days, of the position the State of California would take in the future,

that was to be so near. I have said now about all that is incumbent upon me to say, but I cannot leave this stage without one other remark, as stand here in sight of old Sutter's fort, and it is a thought which inspires me to speak and you to listen, and it is enough to say about the men who broke down the barriers of this savagery and made possible this wonderful development, so you might this night—and your sons—wave for a moment the magic wand of memory athwart the magic mirrors of the unbroken brow of the past, and pause for a moment amid all the rushing of the present, and listen for a moment to the chiming of your memory bells, and you will see before you a land as fair as the garden of the Lord, illimitable in all the elements of a future empire, under no dominion of savagery; but we shall have a people that will make the desert smooth, who shall sow the waste with grain, who shall make of the desert a garden that shall bloom like the garden of Hesperides, and from the rock-bound East to the shores of the mighty West, from the everglades of the sunny South, and, aye, over the cloud-capped Sierras like a rushing wind shall come the response which shall yield to law of labor, and in that word there is no magic.

And now, after the lapse of thirty years you look back and you see this wilderness that was so vast in extent covered up with a people that come here to make a grand civilization. Where you heard the powwow of the Indian, now stands the school house: where nothing but a savagery in a remote time in the world, there now rises church spires, and crosses, and intelligence, civilization, peace, plenty, prosperity, are all around. Labor is king and loyalty is crown. Thus, under the stars as we stand here, there is an absolute fulfillment of the prophecy of the old Quaker poet who wrote forty years ago: "So shall the hardy pioneer go joyfully on his way and wed the Penobscot waters to San Francisco Bay, to make the desert place smooth and see a place that man bears with liberty and law, the Bible in his hand. The mighty West shall bless the East, and sea shall answer sea, and mountain unto mountain call, praise God, for all are free." [Applause.]

ANNUAL ADDRESS

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY AT SACRAMENTO, CALIFORNIA, ON THURSDAY EVENING, SEPTEMBER 22, 1887.

By HON. JOSEPH BUDD, of San Joaquin.

MR. PRESIDENT, DIRECTORS OF THE STATE AGRICULTURAL SOCIETY, LADIES AND GENTLEMEN: The published annual reports of this society abound in many and carefully considered statistics of the productions of this State, and the coming published report of the transactions of the society for the present year, like former ones, will contain all needed statistical information respecting the progress of California, and will make it unnecessary, even if the limited time allotted permitted me so to do, for me to give to you any detailed statements of what has been done in the way of developing the agricultural and industrial wealth of the State. I will, therefore, content myself in indulging in what might be called glittering generalities, or rather in stating in general terms, first, the possibilities of California for material improvement and advancement in population and wealth; second, some of the causes which have hitherto retarded its growth; and third, the fact that these retarding causes are disappearing, and reasons showing why they soon will disappear altogether.

The total area of California is one hundred and fifty-five thousand nine hundred and eighty square miles, the much larger proportion of which is capable of being properly cultivated. The population of California, according to the census of 1880, was only eight hundred and sixty-four thousand six hundred and ninety-four persons, an increase since the census of 1870 of only about two hundred thousand people. Italy, with an area of only one hundred and fourteen thousand two hundred and ninety-six square miles, had in 1871 a population of nearly twenty-seven million of people. The United Kingdom of Great Britain and Ireland has an area of a little more than one hundred and twenty thousand square miles, and has a population of over thirty-five million; and Prussia, with her twenty-seven million of inhabitants, has an area of one hundred and thirty-seven thousand and sixty-six square miles.

Each of these countries, with its teeming millions of people, has a less area of cultivable soil than has this State, and in salubrity and mildness California equals, if it does not surpass Italy itself, the most favored in that respect of any of these nations, and for fertility of soil this land is surpassed by none of them.

Turning back the pages of history and taking a retrospective view of the nations of antiquity, we find that Egypt, Assyria, Persia, those cradles of ancient civilization, were inhabited by a much more dense population than now inhabit Italy or England; the Island of Ceylon, on whose mountain tops are to be seen to-day the footsteps of ancient civilization, possessed in ancient times, within her borders, containing an area of little more than twenty-five thousand miles, cities larger and more populous than is the city of London; and comparatively small Palestine, the land which

God promised as an inheritance to the seed of Abraham, had, in the time of the reign of King David, one million three hundred thousand valiant men who drew the sword. Athens, Macedonia, and ancient Rome, and gold-gorged and gold-ruined Spain, in their palmiest days, were not possessed of the varied climate and the soil products and adaptability for greatness that our own loved State now has.

If Buckle be right, and the advancement of civilization and culture of man depends upon these four conditions, namely: First, climate: second, food: third, soil: fourth, physical aspects of the land—all these elements, which tend to make a great and prosperous people, are within the bounds of this, the Golden State. Its soil, varying with locality, will yield the vegetable products of the most fertile and favored of modern and of ancient countries.

In looking over the reports of our Consuls to foreign lands, and the conditions requisite for the cultivation and raising of the products which constitute their principal staple exports, we find here all the conditions for their like production. The figs of Smyrna, the olives of Spain and Algiers, the silks and wines of France, the wheat of Russia, the hemp of India, and the oranges of Sicily, can all be produced here with proper cultivation. We have the soil, we have the climate, we have the moisture and the facilities for procuring moisture, requisite for the production of all the vegetable products of the temperate zone, and many of the semi-tropical fruits.

The usual winter rains are sufficient for the commencement of their growth, and usually for their maturity. It has been demonstrated that by deep and thorough cultivation of the soil, vines and trees will grow and mature their fruit here without summer rains and without irrigation. But nature supplies the needed moisture without summer rains, near the borders of the ocean; and in the interior of the State she has placed inexhaustible reservoirs, from which can be procured the needed irrigating streams, even during the driest of seasons.

The westerly winds during the summer season, passing over the ocean landward, bear on their wings the moisture-giving fog clouds, which fully supply all summer-needed moisture for the land, extending many miles inland from the ocean shore; and each winter mantles the summits of our mountain ranges with deep new-fallen snow. This the rays of the spring and summer sun dissolve and send in fertilizing streams, some coursing along the surface of the mountain sides, and form rivers, which flow through mountain ravines and into the valleys below, and some flowing oceanward in deep subterranean channels.

These surface streams by dams and irrigating canals can be, and in many places, especially in Southern California, and in the Tulare and Kern Valley basins, and in the upper part of the great San Joaquin Valley, have been, by man's industry and skill, conducted along hillsides and over plains and valleys, and have made them an earthly paradise. The streams which flow in subterranean channels can be, and, in many instances, have been brought to the surface of the earth through artesian wells, and, with constant flow, render certain the productiveness of the soil over which spread their waters. I am not delivering a treatise on irrigation. I merely state the fact that there is comparatively little land in California needing moisture through artificial means to which such needed moisture cannot be supplied if the storehouses of such moisture, which nature has provided, be properly utilized. I need not speak of the deep, rich soil of the tule and tide lands of this State, which are now being rapidly and thoroughly reclaimed, except to allude to what has been accomplished elsewhere. Holland is kept free from the waves of the

mighty ocean by large and substantial dykes, and it would be saying but little for the skill of our civil engineers and the industry of our people to suggest that they cannot protect our low lands from the waters of the streams which flow towards the sea and there are lost in the vastness of those great ocean waves from which Holland protects her lands.

We have, then, the food-producing soil, which Buckle claims is requisite for national greatness. We have also a climate unequalled for its mildness and unsurpassed for its salubrity. In summer, along the coast and for one hundred miles and more inland, the heat of the sun is tempered by the almost constant ocean-cooled westerly winds, while in the valleys near the mountains, when the sun has veiled his brightness behind the cresting waves of the Pacific, the cool air descends from the mountain summit and drives the sun-warmed air of the valleys up, to mingle with the higher atmosphere above. Our nights are almost always delightfully cool, and sunstroke is seldom experienced in the climate of California.

I might speak of the mineral and timber wealth of this State; our quick-silver mines may yet rival those of Spain; our iron ores, only in part developed, may yet equal those of Pennsylvania. We have petroleum, and illuminating natural gas, and the great mother lodes of gold-bearing quartz, which traverse this State from north to south, the exploration and development of which are in a measure but commenced, will yield for ages gold, surpassing in fineness and quantity that of the famed mines of Ophir, which furnished the golden vessels and ornaments which adorned the temple built by Solomon for the worship of the living God; and the cedars of Lebanon are surpassed by the redwoods of California. The mighty trees of these forests, almost awe-inspiring from their magnitude, and towering high heavenward, might well be deemed pillars supporting the azure vault above—Nature's fitting temple for the worship of Nature's God.

California has all the natural physical aspects for inspiring greatness. Her broad valleys, her snow-capped mountains, her deep ravines, her towering precipices over which leap the waters of her streams, forming cascades and waterfalls many hundreds of feet high, give man enlarged views of Nature's greatness, and inspire him with the desire to attain greatness for himself.

With all these natural advantages the inquiry is suggested: Why the increase of California in population has been slow in comparison to that of other States in the Union? A brief consideration of the circumstances connected with the settlement of California since its admission into the American Union, will afford a solution to this inquiry. California was a long distance from the older and more populous States of the Union; the expense necessarily incurred in emigrating from those States here would be sufficient to procure for the emigrant a comfortable home in the nearer Western States. The possibilities for a great agricultural State were then unknown even to Californians themselves. The known dry summers of California—no rains of any amount from April until November—naturally induced residents east of the Rocky Mountains to believe that the soil of California was incapable of profitable cultivation; and the inhabitants of the Northern and Eastern States, where frost reigned king during the winter months, were slow to believe that in the same latitude, on the Pacific Coast, land could be cultivated during the winter season.

An overland trip at that time, from the Mississippi to Sacramento, consumed the spring, the winter, and the autumn, and a removal to California was then an apparent severing of ties, of family, of kindred, and of old friendships. The title to the soil here was then uncertain; the settler who

might then plant his vine and his fig tree had no reasonable assurance that he would be permitted to repose in peace under their shade. Spanish grants sprung up as thickly as did the armed men from the dragon-teeth sown by Cadmus, and were quite as dangerous.

They oftentimes overlapped each other, and the settler could not determine whether they would slay his claim as a preëmtor, slay each other, or be themselves slain by adjudications of the Courts. He could not safely buy the Spanish title: he could not with safety fight it. Everything as to land titles was involved in uncertainty: and the settler could not be expected to plant a vineyard, the fruits of which he might not be permitted to eat, or to dig a well, the waters of which he might not be permitted to drink. Again, in the first years of California as a State, the two principal industries of California were those of mining and cattle raising. The counties of the State were then divided into what were known as the mining counties and the cow counties. The cattle owners required large ranges to make stock raising profitable: they controlled to a large extent the early legislative policy of the State, and that policy was, as might have been expected, favorable to large land holders. When wheat culture succeeded largely cattle raising, the farmer, with his many acres, plowed and seeded them with the aid of hired help, and then, when seeding time was ended for the season, would sit down idly to await the maturity of his crops: and his hired men, in the interval between seeding time and harvest, being without employment, became tramps looking for work, often, however, spending first in the brothels and saloons of the cities the wages received for their winter's work. During the few months of the harvesting season these laborers again found brief employment, to be followed by months of idleness, and often of dissipation, and of tramping once more, seeking employment. The wheat-growing farmer purchased for home consumption in the city markets vegetables, meat, butter, eggs, flour—everything he and his family consumed. His sole source of income was from the sale of his wheat crop, and should any surplus remain after meeting the expenditures of the previous year, it was used in adding to the acreage of his already too large landed estate.

His sons, the natural energy of whose youth required active employment of body or of mind, tiring of the monotony of such farm life, with nothing there to do save for a few months during the year, naturally would seek the more congenial companionship to be found in our villages and cities, and thus would lose the love of home life, so requisite to a sturdy yeomanry.

Our farm wage-winners, from the want of constant employment, would, during the months of their forced idleness, expend the wages they had earned during the time they worked, and thus would save no surplus of their labor-earned money, to provide for themselves homes. They had no homes; they reared no families.

In the Northern and Eastern States the land holdings are small; but from his small farm there, the husbandman produces most of the necessities, and many of the real luxuries of life: his farmhouse is substantial and comfortable; his barns, sheds, and granaries are large and commodious; his land is conveniently divided by substantial fences, into small fields, suitable for the varied pursuits of grain and vegetable growing, and for grazing: near his house is his small orchard and garden, which produce for home consumption his fruit and his vegetables; his hennery provides him with poultry and eggs; a few cows of the most approved breed furnish butter and milk; a few sheep provide him with mutton and wool; a few pigs, raised and fattened on products of the farm, which here would be permitted to waste, give him pork and bacon; a few horses, of good

breed, constitute his teams; the time not given to the cultivation of his larger crops is devoted to his orchard, his garden, and the improvement of his lands; his sons find constant employment at home and learn to love home life; the cities afford a remunerative market for the surplus products of his farm, and each year he accumulates something, which, though it be small, is preserved for his children when they become heads of families and need homes for themselves. These States, with comparatively sterile soil and with a rigorous winter climate, are wealthy and prosperous. History teaches us that large land holdings are obstructions to increase in population and wealth. As Aristotle said, "The best manure for land is the foot of its owner." The former backwardness of the beautiful South, with her broad acres of naturally productive soil, as compared with the material advancement of the vigorous North, was not owing to her former institution of human slavery, now happily ended in this country forever, any more than it was to the immense plantations then held by the few, and to the impossibility for the many to secure lands there, whereon to establish homes owned by themselves.

Another obstacle formerly existing to the rapid increase of California in population, I will mention. When Governor Stanford and his associates, through their indomitable energy, caused the locomotives of their road to climb the foothills from the Sacramento Valley eastwardly, to speed along the mountains' sides, and across the dry and sterile plains of Nevada and Northern Utah, and meet at Ogden the locomotives advancing from the East, it was the wish of the Directors of the Central Pacific Railroad Company to establish rates of fare low enough to induce immigrants to seek the Pacific Coast and there establish homes. It was for the interest of this company to do this. The company had lands to sell. A material increase in the population and wealth of California would advance the market value of the company's lands, and increase the amount of travel and traffic on their road, and thus add materially to its revenues. The great railroad corporations, however, which controlled the connections with the Pacific railroads easterly from Ogden, had no wish to build up California; they had no interest in so doing. Secure, as they deemed, in possessing their share of the transcontinental traffic from ocean to ocean, they were indifferent to any advantages which California might derive from increase of population. They wished to increase the population of the States and Territories, whose local business would be wholly tributary to their own roads, and they refused, as I understand, to establish with the California company any pro rata tariff of fares which would enable the emigrant to travel cheaply from the East to the Pacific; but they did establish a rate of fares which enabled the emigrant to travel cheaply to the States and Territories in which were the termini of their own roads; and such States and Territories, with a soil less fertile than that of California, and with a rigorous climate, increased rapidly in population and in wealth. Most of the obstacles I have mentioned to the material advancement of this State have been overcome. The residue are rapidly disappearing.

The Directors of the California railroad company, with the same energy which characterized the construction of their road from Sacramento to Ogden, built another road, independent of eastern railroad connections, up the San Joaquin Valley, across the Mojave Desert, climbing the mountain through looped tunnel, passing the beautiful City of the Angels, spanning the rapid Colorado, up the Gila, through the heated clime of Arizona, down the Rio Grande, across the plains of Texas, and reaching ports of the Gulf of Mexico, at whose wharves were sea-going ships. This road

was constructed, and the waters of the Pacific and the Atlantic were bound together by lasting ties of steel.

With equal energy and speed the Atchison, Topeka, and Santa Fe Railroad Company pushed westward its road, until the orange groves of San Bernardino and of Los Angeles, and the port of San Diego, were reached. Freights and fares were reduced. This reduced tariff of freights rendered possible the sending of the fruits of California to Eastern States, and with profit to the producer. Reduced fares caused residents of Northern States, who formerly sojourned in Florida during their rigorous winter season, to visit California when the frosts and snows were around their own northern homes. These visitors found the mildness of our winter climate equaled that of Florida, while California, in the salubrity of its climate and attractive scenery, surpassed that land of flowers. Railroads have annihilated the obstacle of distance; and cheapness of fares that of the former great expense of immigration to the Golden State. Many of the former large land holdings in Southern California had been divided up into small tracts and sold, and the owners of these small tracts had planted them with vines and fruit trees. Actual experience showed that a few acres planted to vines and fruit trees yielded the owner a larger net revenue than would many acres devoted solely to wheat growing. Our eastern visitors on their return home gave true reports of the mildness and salubrity of our climate, the attractiveness of our scenery, and of the productiveness of our soil. The possibilities of California as a great agricultural, wine, and fruit producing State became known east, and the tide of immigration of wealthy and energetic farmers swept over the barriers of intervening space and reached Southern California. Lands there appreciated largely in market value; lands in other portions of the State are showing a like increase. Statistics embraced in the published reports of this society show that the citrus fruits can be grown from the foot of Mount Shasta, on the north, to the southern borders of San Diego, while in our greater as well as in our smaller valleys, on the foothills and on our mountain ranges, and on the mountain sides themselves, are grown the table, the wine, and the raisin grape, the prune and the apricot, the pear and the nectarine, the peach and the fig, the walnut and the almond, the plum and the olive: equaling in flavor and in abundance those produced in any other climate. Lands valuable for wine and fruit growing are too valuable for grain raising alone, and although large and remunerative crops of grain are raised in California, and our fields of golden wheat are the just pride of the State, enhanced value of real estate is causing owners of large tracts of land, in Central and Northern, as well as in Southern California, to divide up their large land holdings into smaller tracts, and selling these smaller tracts to persons seeking to engage in wine producing, fruit growing, and in gardening.

It is not in agricultural productions alone that California is now making rapid progress. The wages of mechanics are higher here than in the Eastern States, the cost of living less. The tariff of freights alone affords to many articles produced by our manufacturing industries all needed protection. The car shops of the Central Pacific Railroad Company in our capital city are turning out cars and locomotives equal to those produced by eastern manufactories. Our harvesters, of California invention, and of California make, are the admiration of eastern tourists. And the Union Iron Works of San Francisco have entered into successful competition with eastern ship-building works for the construction of armored cruisers for the National Government.

The greatest works of antiquity, the firm-based pyramids of Egypt, the magnificence of King Solomon's temple, the colossus of Rhodes, the walls

and hanging gardens of Babylon, the temples of Brahma in India, the pantheon of Athens, the coliseum of Rome, Tadmor of the desert, the Palmyra of Zenobia, all were in mild and genial climes. And on the western continent, the mightiest and most enduring works of its ancient people were in the warm climates of Mexico, of Central America, and of Peru. The most vivid imagination will fail to portray the possibilities of California in the future. Our children's children's children, if true to themselves, may see California rivaling in wealth, and in the magnitude, stability, and utility of her public and private works, the greatest of people of ancient or modern times.

FRUIT GROWING IN CALIFORNIA.

RED BLUFF, TEHAMA COUNTY, CALIFORNIA, }
January 30, 1888. }

EDWIN F. SMITH, *Secretary State Board of Agriculture:*

DEAR SIR: At your request I venture to give a few hints on fruit culture in California, designed especially to aid new beginners coming from the East, as well as those of our own people who have not heretofore considered the matter from a practical standpoint, but are now beginning to plant.

Considering the importance of the industry and its rapid increase, and further, that the conditions of climate here render the books written from the standpoint of the Atlantic Coast a very imperfect guide, it is astonishing that no one has given us in consecutive form, by pamphlet, book, or otherwise, a treatise on fruit growing in this State.

Very full information may now be had at the bookstores upon the growing of citrus fruits, the olive, and the grape, but beyond this I can find nothing. As to the large and profitable class of deciduous fruits, always, in my judgment, to be the most remunerative of our fruit products, and producing the greatest wealth to the State, not including the grape for wine and raisins, we must grope through fugitive articles in the papers, in agricultural journals, and the reports of the Horticultural Society. A book has been promised us for two years covering the whole field, but the difficulties in the way of satisfactory treatment have left us still to such guides as experience gives, and as may be gleaned from the sources named. This lack of sources of knowledge within reach is my only apology for attempting to instruct any one in so important a matter. For information as to citrus fruit growing, the olive and grape culture in all its forms and for all purposes, I refer the intending planter to published works, and to the reports of the State Viticultural Society, written wholly from the California standpoint, and giving a full and satisfactory treatment of these subjects.

PLAN OF ORCHARD.

It is usual to plant in form of a square. I plant in triangular form of figure. By this method you get about 15 per cent more trees to the acre, and each tree is equidistant from its neighbor. At twenty feet apart, by the square system, you get one hundred and eight trees to the acre; by the triangular, one hundred and twenty-six. A simple and easy way to lay off an orchard by this plan is this: Take three strips of lumber, one inch thick and three or four inches wide, and of length, a foot or two longer than you wish your trees apart. Make a triangle. Bore holes at the angles, each the number of feet apart from the other you wish your trees. Lay off one row of your orchard on the side of the plat to be planted. Drive small stakes the distance apart of the holes in your triangle. Set one side of your triangle over two of these pegs, and stick a peg in the other hole. Lift off and move along and set over the next pegs on the base line and stick a peg in the hole as before, and so on across the plat. You

then have a new base line for the triangle. Continue as before and you will have the stakes equidistant, and the rows will be perfectly straight. A second device, to preserve these stakes when you come to plant and are obliged to dig them up to make holes for your trees, is this: Take a board four inches wide and four feet long, and cut a notch on the side at each end and cut a notch in the center. When you dig your hole first lay this board down with the stake where your tree is to go in the middle notch; then pull up the stake and put it in one of the end notches and another small peg in the other. The hole may then be dug, but don't disturb these outside stakes. When you get ready to plant, set your tree in, and put your board back on the pegs and let the tree trunk rest in the center notch. The board will help to steady it, and when set the tree will be in the exact spot where your stake stood before the hole was dug. I have found this simple contrivance avoids all the trouble and difficulty of getting the trees straight after the peg is dug out.

Don't stop at the expense of a little money and trouble to have your orchard symmetrical and neat in appearance. Perfect alignment of trees will always give a pleasurable sensation to the beholder, and will facilitate cultivation.

WHAT TO PLANT.

In all the desirable fruit regions of this State there will be found growing almost every variety of fruits. In some cases this is on an extensive scale, in others quite large, and in others small, but more or less trees of nearly all varieties will be found advanced to fruitage. No one need be misled as to what fruit is adapted to a particular locality if he will take the trouble to inquire and faithfully note down the result of his information. So that when fruit growers tell you to plant that which is adapted to the soil and climate of the locality, they tell you what is important and what it is within your power to learn. This caution cannot be too deeply impressed on your mind. For instance, along the seacoast and within the influence of the trade winds, or in the more moist atmosphere there prevailing, you will be more successful with some fruits than in the hot valleys of the interior, and *vice versa*, but you can readily learn these differences in advance by inquiry.

If you have a particular fancy to engage in any particular fruit, find where it does well, or best, and there make your home. If you should desire to engage generally in profitable kinds of fruit, without preference as to locality, you cannot go amiss: only, when you come to plant, be guided by what you see, and don't strike out on untried lines; do your experimenting when you have an income and can afford it. I would suggest that you select for a home the place, all things considered, that seems to meet your social wants, or that will soon do so, and unless it is immediately on the seacoast or high in the mountains you will find the place suitable for profitable fruit culture of some, indeed, of nearly all of the many varieties adapted to our climate, almost anywhere in the State.

NO SPECIAL KNOWLEDGE REQUIRED.

One of the most successful fruit growers in California told me the secret of his success, he believed, lay in the fact that he began without knowing anything about the business. What he meant was that he didn't have to unlearn what most men must who come from the East. The planter must, however, not suppose that "ignorance is bliss" in fruit growing. Our pioneer fruit growers have developed a system at once unique and yet

based on sound sense and experience, but the principles underlying it are now well known, or are attainable, and should govern the man who wants to start at the point we have reached and avoid the losses and discouragements which would surely attend him if he attempted to follow the lights furnished him by observation elsewhere.

WHAT KIND OF A TREE TO BUY.

Go only to a reliable nurseryman who can be made to respond in damages should he sell you a seedling for a graft, or a clingstone when you want a free; or a prune when you want a plum.

Except you irrigate your trees, or plant in exceptionally moist soil, don't be persuaded to buy any tree more than a year old. I know you bought only two and three years old trees back East, but don't do it here. Remember I am only treating of deciduous trees, and I cannot think of an exception.

NUMBER OF VARIETIES.

My advice is to avoid planting many kinds of fruits or many varieties of the same fruit. The local market generally is not what we must rely upon. This may be consulted, however, and often you will see where you can make money by supplying a local want. But generally our people are planting to ship, or to dry or can, and your eye must be on the foreign market. Often if you have enough of one variety you can dispose of it as a whole, whereas if your orchard were made up of many, and few of each, no one could handle it: and this applies also to varieties of the same fruit. It is well to plant, of course, so that one crop will follow another.

PREPARATION OF THE GROUND.

It is of the highest importance to thoroughly plow and subsoil the land before planting. The practice of plowing as you would for wheat or digging the hole large and intending to plow after planting, is the worst possible thing to do. We have long, dry summers, and no rain after April or May. Deep plowing preserves the moisture and renders the land more easily cultivated and gives the roots a chance to go down. No man deserves success or need expect it who will try to grow trees with shallow plowing. By deep plowing and thorough cultivation after planting, he may safely plant in any of our valleys, and on our plain land and foothills without irrigation. By thorough cultivation let it be understood that you are to keep the cultivators running well into the summer. It is the true and only way to retain the moisture.

HOW TO PLANT AND HOW TO FIRST PRUNE THE TREE.

If you have followed the advice as to deep plowing—not less than a foot deep—you do not need to be so particular to get a large or deep hole, because your ground is prepared around and beneath.

Your tree should be planted so that the bud, after the earth has settled, will be just covered.

Before planting, trim off all broken or bruised or long roots, and when the tree goes into its place see that the earth is firmly set around the roots and no air spaces left among them.

After the tree is planted—which is supposed to be a straight stem, thrifty

and vigorous—cut it off within a foot of the ground, so that your orchard will look more as if it had been staked off to be planted than as planted.

Here is the *pons assinorum* of young planters. They remember the old orchard “back home” where they used to ride under the outspreading limbs and pick off the fruit or got a ladder to climb up to the first limb, and it is almost impossible to make them believe it isn’t butchery to cut these beautiful young trees six feet high, to a foot’s length. Many, when told, will persist in the old method, only to find their mistake in later years, and too late to be remedied. Some of our best orchardists advocate cutting down to six inches.

The reason for this I will briefly state: We start the head low because the trunk is thus shaded from the hot sun, a necessary precaution; because the tree, when grown, will not yield to high winds; because the fruit is within easy reach and can be more cheaply gathered; because the limbs can be more readily and cheaply pruned; because it is easier to fight insect pests; because we find that more trees to the acre headed low and kept well pruned back, will produce more and better fruit than large, high, spreading trees, and fewer to the acre. The objection to low heads that the plow can’t be used close to the tree is not sound, because, by proper shaping of the lower limbs, we can plow close enough, and besides, too close plowing is dangerous to the root system, and results frequently in wounding the trunk. The plow is an ugly tool to handle next the tree.

We find that high pruning and a long body subjects the tree to borers, to sun-scald, and diseases obviated by low heading. Upon this point no beginner should set up his judgment against the experience of our best orchardists.

The first year, with most trees, do not rub off the buds below those you reserve for the head; they will push out foliage to shield your trees, and the next year they can be cut off. If any appear to you too rank, and to sap the trunk, pinch off the tip. These directions apply to our unirrigated lands, and lands not exceptionally moist, and I have in mind the more common deciduous trees, such as prune, plum, apricot, peach, the nut trees, apples, pears, and the like.

PRUNING.

Assuming that you have plowed and planted well, and have kept up a thorough cultivation of the soil, and have started right, the next greatest concern is to prune the tree properly, for herein lies ultimate success. The perpetuity of your orchard, its healthfulness, productive capacity, and quality of the fruitage, lie here.

If you have started with a low head, and your tree has branched properly, you have a good foundation for a shapely and perfect tree. If you have violated the California practice in this regard, and started a tree three or four feet from the ground, I would advise you to cut it back the second year to a proper height, and start afresh, or dig up your trees, for the orchard otherwise will be a failure.

Upon the subject of pruning I cannot take up each variety. Some general rules apply to nearly all the fruits I have referred to, and with a little intelligent observation the planter can soon apply special rules to special cases.

At the second year’s pruning, leave three, four, or five limbs, as the growth of the tree will admit, properly balanced as to the sides of the tree, six to twelve inches long, depending on the vigor of the tree; in some cases you will have to cut back to three inches. Cut to an outside bud

on the upright-growing trees, such as the cherry, prune, or pear, and to an inside bud on the spreading trees, such as the peach and apricot.

At the third year's pruning, cut back one half to two thirds, and even more if necessary to build up your tree.

The fourth year will not vary much from this, although you will now be getting fruit, and this will modify your rule somewhat.

Take the Bartlett pear for illustration: you must cut back heavily or it will overbear. It must be pruned systematically and thoroughly every year. The tree must be made stocky and strong, and not be allowed to run up into the sky, as is its tendency. Prune to make a well shaped head and strong body, and not for fruit, until you get a tree.

As I write more to guide planters who are starting, I need not now undertake to lead you through the years to come: you will have learned by observation of well pruned orchards what to do as your orchard grows older. Start right and you will have a year at least to learn, and, indeed, the second year will not bring complications if you follow the simple directions given. After that you don't deserve success if you have not learned what to do. Our pruning is done in the winter months, and generally before February.

Now that we have seen how to prepare our ground: how to prune our young trees, and cultivate to make them grow, and generally what trees to plant, we are to inquire more particularly as to varieties, their requirements of soil, and commercial value as producers.

PEACHES, APRICOTS, PRUNES.

I am myself planting chiefly of the varieties above named. When I first came to this valley (the Sacramento) eleven years ago, the general belief was that peaches would not do well here, and quite recently it was thought they would not pay (even after it became known we could raise the best peach in the world) because peaches were grown in the East. The fact is apt to be overlooked that we have over sixty million people in the United States to feed, and that they are increasing rapidly, while the area in the East where peaches can be successfully raised is quite limited: that our peaches come into market much earlier than theirs: that the supply East gives but small surplus for drying: that dried peaches are almost a prime necessity in domestic life: that abroad peaches are little known and only as a luxury: that the universal prosperity of our people makes it possible for them to indulge in the purchase of such fruits as can be furnished at reasonable prices. The peach in California is already an important factor in our fruit trade. It is easily handled, either as green fruit or in drying or canning. Trees four years old, of proper varieties, will yield from \$1 to \$5 per tree in value, and often a good return at three years old. Ten acres of good peach trees in full bearing will bring in more net revenue than the best one hundred acres in wheat, with much less labor. We make the mistake generally of not discriminating as to varieties and by having too many varieties. Select only a few kinds, and the best for canning and drying, and you may rely on good returns every year. Don't pick your peaches like the Chinamen generally do, by knocking them off the trees on to the loose ground, green and ripe together, and gather them up covered with dust. I saw basket after basket of peaches at Vina this year being shipped to San Francisco, whose color you couldn't tell without brushing off the dirt, and yet canners paid 1½ cents and 2 cents a pound at the cars. The Vina dried peaches would have brought

20 per cent more if they had been handled properly, and yet they brought from 7 to 12 cents.

Don't raise fruit unless you will take care of it. Plant of freestones the Muir, late and early Crawford, Susquehanna, Wager, and Solway. The Susquehanna and Solway for canning are probably the two best; for drying, the Muir. For canning, avoid a peach with much red at the pit, and for drying, get a peach with small pit, fine meated, and not over juicy. The clingstone has its advocates. As a rule it is sweeter than the freestone and firmer meated, and modern tools for pitting make it almost as easy to prepare as the freestone. W. W. Smith, of Vacaville, thinks the cling will some day be the canning peach, and he is high authority. The Orange Cling and the Tippecanoe, for yellow clings, are good enough; the Heath, for white.

Apricots are to my mind among our most valuable fruits. They are not grown out of California in the United States to affect the market, and to no great extent elsewhere in other countries. As canned fruit they are eagerly bought as fast as their merits become known, and they sell better dried than peaches. They are healthful, delightful to the taste, and are about the only fruit that retains its flavor, and is as good canned as fresh from the tree. Only in late years have our people heard of them, much less tasted them, and to thousands of people in the East they are yet unknown.

The market is almost exclusively for dried and canned, mainly the latter. They ripen rapidly, and growers must be prepared to take care of them. The canners will come and get them if there are enough to warrant it, but when we bring our trees into bearing we must have canning houses near home and be prepared to take care of our own fruit. The apricot is a vigorous grower, a liberal bearer, and yields large returns to the owner. The varieties planted heretofore have been Moorpark, Peach, and Royal, but some other valuable kinds are now in the market, among them Blenheim and Montgamet. The apricot bears about as soon as the peach.

The prune does not make the vigorous and rapid growth at first that the apricot does, but makes a fine tree and ultimately bears abundantly. No more healthful or toothsome dried fruit is to be found than the prune. We have foreign competition, mainly in France, but none on this continent. Civilized man has known the French prune for centuries, but the price has never allowed the fruit to be universally used. There are large profits in prunes at prices that would make it possible for all classes to use them freely, and such use will create an enormous demand. We have not, in the upper Sacramento Valley, yet shown the adaptability of our climate for the prune as we have the peach and apricot, but south of us, in our valley, and in the San Joaquin, they do well, and all the conditions seem to be present here for their successful growth. On the "Star Ranch" of Mr. Duncan, near Red Bluff, some fine specimens of prunes and plums are shown.

We speak of prunes and plums apart from each other. All prunes are plums and generally speaking the conditions for successful growth must be the same.

For drying, the French prune is the favorite. A great deal of learning has been expended to determine whether we have the true French prune, and nothing seems yet certainly known as to the identity of our prune with the prune of commerce in France. We know, however, that our prunes sell well, are profitable, and are making their way against the imported article. The Hungarian is large, productive, and profitable; is bright red, juicy, sweet, a strong grower, a good bearer, and parts from the stone; while the French prune is medium size, oblong, reddish-purple, rich

and sugary, and very productive. Requires deep strong soil to bring it to the greatest perfection. I think it the most profitable for general culture. The German prune is also medium size, long oval, purple, is good dried, and separates from the stone as does the Hungarian prune, and in this differs from the French prune.

The discussion of the plum belongs here. In our State we have some insect pests of the plum and some diseases of the tree, but we have no cureulio such as has destroyed this fruit in the East. This has made the growing of plums very profitable here. I would not at present plant for shipping green, except of varieties that can be successfully dried, and few of the plums can be: while some of the prunes are good shippers green, for example the Hungarian, being large and handsome. The Kelsey (Japan) plum is attracting attention as a shipper.

As to soils, the peach, prune, and apricot require much the same to bring the fruit to perfection without irrigation. With irrigation, almost any of our soils are good. Indeed, I have seen fruits growing on nearly all our soils—even including the adobe—and I think no one can safely say that any particular fruit will not do well on any particular soil, while it is of course true that certain soils are safest and best. Mr. Aitken, a prune expert of Santa Clara Valley, says where the apple and pear will grow a good prune can be raised, and we know that pears do well in heavy soils, as do apples also. In a discussion before the State Horticultural Society, he doubted whether they would do well in the hot valleys, but he was immediately confronted by delegates from the San Joaquin, and Los Angeles, and Sacramento Valleys, who showed to the contrary.

APPLES, PEARS, CHERRIES.

Good apples are scarce in this State. I think it is generally conceded that in our low valleys, where the heat is greatest, the apple does not flourish, and yet J. S. Cone, near Red Bluff, has a large orchard which, until the codlin moth took it, was producing fine apples, and I think General Bidwell at Chico raises good apples. Mr. R. B. Blowers, of Woodland, contends that good apples can be grown in our valleys if the conditions required are maintained, which can be done by a judicious use of water. Our best apples, however, come from the foothills and higher altitudes, but the profit is much decreased by cost of hauling to market. I have never seen a year yet, in ten years, when we have not paid good prices for fall apples—we are now paying 2 cents a pound. Plant only a few of the best varieties, and unless you are near market, let these varieties embrace fall and winter apples. The foothill fruit has fine keeping qualities which the valley apples seem to lack. Plant but few kinds and of known value, such as the Spitzenberg, Baldwin, Yellow Newtown Pippin, White Winter Pearmain, Smith's Cider, Yellow Bellflower, and for very early, Red Astrachan and Early Harvest.

The pear is becoming, indeed is one of our most profitable fruits. The pear has almost disappeared in the East as an article of fruit commerce, and the yield is always precarious. The canning of pears on an extensive scale was left to California. Summer pears should be gathered ten days before they are ripe, and autumn pears two weeks. Winter varieties may hang, if they will, until the leaves begin to fall. Don't let your tree overbear: thin out when the fruit is small. Of the summer pear, there is no use planting any but the Bartlett. It is good for market or canning, large, buttery, with rich musky flavor, erect grower, bears young and abundantly. Other good summer pears, such as the Le Conte, Clapp's Favorite, Souve-

nir du Congress, are on the lists, but their resemblance to the Bartlett is their chief recommendation, and why buy an imitation when you can get the standard genuine. Of autumn pears, plant *Beurre Clairgeau*. It is high flavored, valuable for market, bears transportation, ripens in October and November. *Beurre Hardy*, *Duchesse d'Angouleme*, *Kennedy*, and *Seckel* are all good.

Of winter pears, plant *Easter Beurre*: keeps December to March; *Winter Nelis*, December. The *Winter Nelis* is a good shipper and valuable for market. Unless you are planting several varieties to meet shipping and market wants for green fruit, I would stick to Bartletts, because, if you can't ship, the canners will take them.

If you want a winter pear to follow up your Bartlett, plant the *Winter Nelis*. Mr. Gray, General Bidwell's Superintendent, stated before the State Horticultural Society that there is no fruit that will bring in as much money to the northern part of the State as the *Winter Nelis*. He says they sell all they have at 2 to 4 cents a pound, and could sell more. He further says: "We have never had a failure, and it seems to be a very profitable tree, yielding from \$400 to \$700 or \$800 an acre." At the same discussion, Mr. Stone, of Compton, said his Bartletts yield \$5 and \$6 to the tree.

Strong, rich, sandy loams are good, and these pears also do well on heavier soils: indeed, in some places the heavier soils are the best.

The cherry does well in our valley, notwithstanding the impression prevails that they must grow within the influence of the sea. General Bidwell has a tree that has yielded one thousand seven hundred and fifty pounds at a crop, for which he got 5 cents a pound. Forty-eight such trees, and such yield to the tree, would show \$3,850 per acre. Such yield is phenomenal and need not be counted in an estimate of profits, but there is no doubt about cherries being profitable and well adapted to our climate and soils. Select good, well drained, sandy loam, in as early exposure as you can. Cherries ripen here, in Tehama County, earlier than further south, and about as early as at Vacaville. *Black Tartarian*, *Black Eagle*, *Black Republican*, *Napoleon*, and *Centennial* are the five best shippers. The *Napoleon*, *White Tartarian*, and *Centennial* are the canning cherries.

THE FIG.

The importance of the fig in commerce is not generally understood, and few persons yet know what a mine of wealth for us there is in fig culture. Nowhere in the State are the conditions for successful fig culture more pronounced than in Central and Northern California. I have not space to go into this subject, but there can be no doubt about the importance of the fig to our planters. The tree is not subject to any insect pests, and the yield is enormous and the manipulation of the fruit for market readily understood. Now that we can buy them at reasonable prices, I would plant only the *White Adriatic*, although the *Black California* fig shows good profits where properly handled.

NUT-BEARING TREES.

The almond is a very profitable tree and we know it will do well here. You want a strong bearer of thin-shelled nuts, which we have in the *I. X. L.* and *Nonpareil*. Don't waste time on low priced thick shells. These varieties I have named need no bleaching in our climate, but hull easily, are bright and uniform in size. The *English walnut* takes naturally to

our soil and climate, and I think you would find this a safe casket for some of your eggs. The black walnut, hickory nut, and chestnut of our boyhood days are going fast, and what are the people to do but to look to California for cultivated nuts? When we were boys we bought a bushel of hickory nuts for four bits and even a quarter. We stored them away in bags and barrels and ate them evenings with our apples which we got for the picking. Those days of peace and plenty and no money have passed. We earn and spend, for what our appetite craves, a dollar where we used to earn and spend a shilling. There is scarcely any of our fruits that will not find a remunerative market, and we need not worry about over-production. You can't plant fast enough for the increasing demand.

SMALL FRUITS.

The blackberry, raspberry, gooseberry, strawberry, and, if we may class them as small fruits, table grapes, are all profitable fruits to grow and deserve separate attention. I must not prolong this article, and will only speak particularly of the blackberry and raspberry. Small fruits should be encouraged in neighborhoods, because they are needed to make up the varieties required by the canners, and besides they are very profitable.

THE BLACKBERRY AND RASPBERRY.

Correct pruning is as necessary in the successful growth of the blackberry as in fruit trees. If you let your bush run up six or eight feet, and head the stock there, your bush has but a half formation; the long, main stock is left unshaded: your fruit is up in the air and sun, and will burn and not mature. What you want is a stocky bush, not too high and not too low; if too high, the direct rays of the sun will burn your fruit, and if too low, the reflected rays will burn it. At four feet above the ground pinch off the tips. The bush will then throw out laterals. Pinch these off at about a foot. These again will throw out laterals which should be pinched off at a foot's length. You will thus get a compact, stocky bush, whose foliage will protect the berries, and whose branches will not break, and you can easily cultivate your patch. The first year you get no fruit; the second you prune as above, and now prepare for a rich, luscious harvest. Irrigation is essential, and you should never allow the ground to dry out after each irrigation you should cultivate. The ground should be thoroughly manured each year. Your soil should be a rich, sandy loam, the more moist the better. Of course, without manure you will have fine berries, if the soil is good, but the best results are obtained only with manure. Plant six feet apart each way, and only one root in a place, or one thousand two hundred and ten plants to the acre. Stake each separately, if you can, and if not, set a post at each end of the rows, and brace them well, and stretch a wire from post to post, about four or five feet above ground, on which to tie the runners, and support it at intervals with stakes.

Raspberries are managed much the same, only they are planted more in a place, and more closely together one way, and are headed back at eighteen inches, instead of four feet.

The product of an acre of these two berries would astonish any one not familiar with their prolificness.

Wilson's Early and Kittatinny blackberries, and Cuthbert (red) raspberries, are recommended.

PREPARING, DRYING, SHIPPING, CANNING.

Nothing rewards so well as carefully preparing for market. Right here I want to say that there will always be failures among fruit growers, as there are in all other occupations. One man will make money with sheep, and his neighbor with equal chances will lose; one man will succeed with wheat, and another fail; and so one man will succeed with fruit, and his neighbor may fail. Every step, from planting the tree to marketing the fruit, tells upon success or failure, and it becomes important that every step should be right. Generally the man who will take interest enough to plant well, and prune and cultivate well, is the man who will take care of his fruit when it comes. Still, there are some who plant and cultivate and prune well, who do not know what to do with their fruit. If you are picking green fruit, pick it at the right time; put in good shape to be attractive to the eye; don't mix good, bad, and indifferent, but sort your fruit, and you may be sure your first-rate packages will bring more alone than all your crop, mixed higgledy-piggledy, and you will have the balance left.

In drying, do the same. Keep the first-class fruit by itself. In the market, dried fruit that has been first bleached, will bring three to five cents more per pound, and the extra cost will not be one half a cent per pound. Extra nice fruit, or fruit well put up if not extra, will always sell, while often your mixed of good, bad, and worthless, will not sell at all. Find out what form of packages take best, and adopt them. The package often sells the fruit. Be provident in looking ahead for your market, and making provision for picking your fruit. If you can find a buyer for your green fruit at the orchard, let him have it, unless you can see a clear advantage in handling it yourself. As a rule the canners pay all they can afford. But you should always have it within yourself to take care of your fruit, and this needs no great outlay. By cooperative effort we can always handle our fruit to profit, if by no other way.

INSECT PESTS.

I shall not attempt to give you treatment of insect pests in this paper, but shall only give a note of warning, and tell you what you can and ought to do for self-protection.

There is no great mystery about practical entomology, at least to an extent such as will serve general purposes. You ought to see first that your tree, when you plant it, is not infested. Get yourself a cheap magnifying glass; buy Matthew Cooke's book on insects, injurious and beneficial to fruit, and study it. Ordinarily you will with the aid of your pocket-glass and this book be able to name the insect, and at once can find the remedy in the book. The remedies are inexpensive. You should have a spray pump or syringe and you are equipped. When I hear a man talking about his not being able to rid his orchard of injurious insects, I sometimes think the Lord made a mistake in not making the man the insect and the insect the man. If you watch from the start and apply remedies at once when the pest appears the work is easy. If you find something you can't name, and don't know its habits or history, write to the State Fruit Inspector and send him a specimen bug and he will aid you. Not only watch your own trees, but keep an eye on your neighbor's, and see that he does his duty. He has no right to keep a breeding place to overrun you, and the law will protect you against it. Get your children interested in bug

hunting. Often your little eight or ten year old boy or girl will find what you fail to observe. Start a collection of specimens of injurious and beneficial insects, and familiarize yourself with their habits and learn the treatment. You will be astonished at your advancement in knowledge, and will find the study exceedingly interesting. The late Matthew Cooke began in this way and died a benefactor of his race, leaving behind him a rich treasure of knowledge gathered in his books.

If your apples or pears have holes in them, and a worm at the core, look out for codlin moth and see what to do, and do it at once. Taken early, this pest is readily overcome and the remedies are now well known.

Don't think that you are on velvet when you begin to take \$200 or \$300 per acre from your orchard. Eternal vigilance is the price of a good orchard.

Don't plant an orchard as you would work a mine, expecting some time to abandon it. Make it your home and your life, your highest pleasure. The man who has forty acres of fruit trees, well selected and well cared for, has an investment of ever increasing value; he has an occupation, which, in its nature, is calculated to develop in him the highest attributes of manhood. Of all the pursuits to which the soil invites, he will find here the widest scope for intelligent action, and that which inspires a pride in the dignity and nobility of his employment.

I have exceeded my limit and must not take more of your valuable space. Upon review, I find nowhere have I stated when to plant. Locked in the snow and ice while I write and while our planting and pruning are going on, our trans-Rocky Mountain neighbors may not realize what seems to us needless to state—namely: That we plant during the winter and spring up to April: but we ought not, where we cannot irrigate, to plant later than the middle of March, and December and January would be better if we have early rains and can work our ground. Having no summer rains and generally none later than April worth considering, our trees should be well settled and have the benefit of late rains in winter and early spring. Often our almonds and peaches are in bloom before an eastern orchardist could put a plow in the ground. It is not unusual to see an apricot orchard in full bloom in February.

We begin to gather early fruits in May, and we have a succession of fruits thenceforward until autumn, and are gathering something every week.

The bulk of our deciduous fruits, however, fall in July and August. I have seen a fair crop of peaches the second year from planting, and the third a profitable one.

Apricots, prunes, pears, and indeed most of these fruits do not yield much until the fourth year, although you may count on enough fruit in three years to pay expenses if you have done your part.

Nearly all our fruits bear every year.

A word of disclaimer. I do not pretend to much knowledge upon fruit growing aside from what experience and close observation have taught me.

There are hundreds of men in the State more competent to teach than I if they would only do it.

I have tried to anticipate for the beginner some of the pitfalls into which I stumbled and show him how to keep out of them. If I shall have guided any groping aspirants into the easier paths of fruit growing by this somewhat hastily prepared paper, I shall feel rewarded for the trouble.

Very truly yours,

N. P. CHIPMAN.

THIRTEENTH ANNUAL REVIEW

OF THE

Raisin, Dried Fruit, Prune, Almond, Walnut, Peanut, Comb and Extracted Honey Product of California, for the Year 1887.

By GEORGE W. MEADE & Co., San Francisco.

We believe it is a matter of only about thirty years ago, more or less, when a United States Army officer, stationed on the Pacific Coast, being relieved from duty and ordered East, made the remark, as he was about leaving, "that there was not a foot of land in all California worth twenty-five cents an acre," and further "that any man would surely starve to death, and quickly, who even attempted to make a living on the bleak and barren deserts of the Pacific Coast."

This officer has long since gone to his rest, and looking at the State as it was then, his observations and conclusions may not have been so absurd and so apparently foolish as they appear to us now. San Francisco was then a city principally of tents scattered over sand-hills. The great rich valleys of the State were given up to wandering herds of cattle. The population was sparse and largely composed of "greasers," half-breeds, with a scattering of some Mexicans and Spanish. With the natural laziness of these people, no attempt whatever to speak of had been made to demonstrate what the rich soil of the State would produce even with half a proper cultivation.

So time run on until the "live" Yankee came in, who soon proved what could be done in the way of fruit and agriculture in all portions of the State, and although the "days of gold" had passed, this new blood re-discovered California, and found even greater gold mines in its vast vineyards, in its great fruit orchards, and its wheat fields, stretching along nearly a thousand miles of seacoast on the west, and extending to the foothills of the great mountains on the east. If this officer then could come back to-day and look now upon the imperial city of San Francisco, with its palaces, and a thousand millions of wealth: if he could realize that the city of tents which he left thirty odd years ago, is to-day the *eighth or ninth* city in the Union in point of population, the *fourth* in the amount of business transacted through its Post Office, and the *third* in the value of its importations and the revenue collected at its Custom House; and if, after realizing these things, he should go still further in his investigations, and should look upon the flourishing cities and towns that have grown up in all portions of the State; and if he should visit the great wine and raisin vineyards which dot California, and which are commencing to supply the Union with these products to the exclusion of the foreign; and if he should view the thousands of square miles of great orchards, producing the finest oranges, lemons, peaches, apricots, grapes, nectarines, prunes, plums, pears, almonds, and walnuts, in the world—well might he, in a dazed way, think

it all a dream, and ask again to be returned to his fathers. Such, however, is the California of to-day. Great in vast resources developed and undeveloped. Powerful in her great and rapidly growing wealth and influence. Beautiful beyond description in her natural scenery, and rich in a climate which permits a man ten to eleven months in the year to sit in sunshine under his "own vine and fig tree."

Famed throughout the world for a hospitality which has no equal: the land of flowers, of fruit, and of wine, of lovely women and of song—"Viva California."

THE PRODUCT OF 1887.

Raisins (20-pound boxes).....	800,000
Honey, extracted (pounds).....	1,090,000
Honey, comb (pounds).....	250,000
Beeswax (pounds).....	25,000
French prunes (pounds).....	1,750,000
German prunes (pounds).....	75,000
Apples, sun-dried (pounds).....	260,000
Peaches, sun-dried (pounds).....	1,750,000
Plums, sun-dried (pounds).....	400,000
Pears, sun-dried (pounds).....	40,000
Grapes, sun-dried (pounds).....	600,000
Apricots, sun-dried (pounds).....	200,000
Nectarines, sun-dried (pounds).....	100,000
Figs, sun-dried (pounds).....	90,000
Apples, evaporated (pounds).....	550,000
Apricots, evaporated. } (pounds).....	3,000,000
Apricots, bleached .. }	
Peaches, evaporated, peeled (pounds).....	500,000
Peaches, evaporated, unpeeled (pounds).....	750,000
Plums, evaporated (pounds).....	50,000
Nectarines, evaporated (pounds).....	50,000
Walnuts (pounds).....	1,500,000
Almonds (pounds).....	500,000
Peanuts (pounds).....	250,000

California Raisins.—After a careful review, we estimate the outturn for 1887 at eight hundred thousand boxes, and divided as follows:

Fresno District (boxes).....	350,000
Tulare District (boxes).....	10,000
Riverside district (boxes).....	180,000
Orange and Santa Ana District (boxes).....	85,000
San Diego District (boxes).....	20,000
San Bernardino County, outside of Riverside District (boxes).....	10,000
Yolo and Solano (boxes).....	125,000
Scattering—Yuba, Butte, Sacramento, Placer, etc. (boxes).....	20,000
Total (boxes).....	800,000

Owing to heavy and untimely rains which did great damage in some of the largest raisin sections of the State, the output fell considerably short of calculations made early in the season, and which were based on the heavy yield of the vines. This, however, is not apt to often occur, and had it not been for this unfortunate turn of affairs the product, as at first estimated, would undoubtedly have reached one million boxes of twenty pounds each.

The consumption of California raisins on the Pacific Coast and Territories we estimate at one hundred thousand boxes yearly.

As was the case last year, it will be noticed that Fresno again heads the list, and the development of the raisin industry in that portion of the State is not only wonderful, but startling. A few years ago Fresno County was looked upon as a barren plain, but to-day it is the great raisin section of California, and within a few years promises to be the raisin section of the world. It is in fact the home of the raisin, the apricot, the peach, and the

nectarine; and all these fruits not only grow there in the greatest profusion, but they are ready for eastern shipment from two weeks to a month earlier than any other portion of the State. The good work that was done on California raisins last year created throughout the East and West a greater and sharper demand than ever for the California raisin, and every packer here of reliable or well known brands has had his capacity taxed to the utmost to keep up with this demand. The berries this year in some sections were disappointing as to size, and considerable trouble was found to secure fruit to make fancy grades, so that a good portion of the product has been run into Loose, for which, however, the large eastern trade principally called. Improvements in packing continue to be made every year, and even now at the larger factories work is almost entirely done by steam power.

In most cases imitation of Spanish labels and wrappers have been discarded this year, and something distinctly Californian used.

The outlook for the raisin industry of California is more than brilliant. We have the United States for a market, and when we have supplied that, we can go abroad. The writer of this stated a few years ago that it was only a question of time when California raisins would drive the imported from American markets forever. That time is rapidly approaching. It may be of some interest to know what quantity of fresh muscat grapes were consumed in making these raisins this year. Here are the figures: Sixteen million pounds raisins, equaling fifty-eight million pounds of fresh grapes. This will equal three thousand cars of green grapes alone for raisins, but it must be remembered that this does not include the great trains of these muscat grapes shipped east in a fresh state, nor does it include the vast quantities used for home consumption and in canning, etc. Truly, this is a wonderful land.

At present, stocks here are about exhausted, and we shall enter the new year with small supplies, and firm in the faith that next year, with the new vineyards coming into bearing, and good weather, that California will turn out in the neighborhood of one million five hundred thousand boxes of raisins, or thirty million pounds, consuming in their manufacture at least one hundred and five million pounds of fresh muscat grapes.

We also append herewith the production of California raisins from the year 1873 to 1887, showing the growth of this industry:

1873.....	6,000 boxes.	1881.....	90,000 boxes.
1874.....	9,000 boxes.	1882.....	115,000 boxes.
1875.....	11,000 boxes.	1883.....	140,000 boxes.
1876.....	19,000 boxes.	1884.....	175,000 boxes.
1877.....	32,000 boxes.	1885.....	500,000 boxes.
1878.....	48,000 boxes.	1886.....	703,000 boxes.
1879.....	65,000 boxes.	1887.....	800,000 boxes.
1880.....	75,000 boxes.		

Previous to 1873 but few raisins were put up here, and as might be supposed, of very inferior quality. The product continued to increase slowly until the year 1882, when new vineyards coming into bearing, it jumped rapidly until present figures were reached. California raisins are now mostly sold by the producers in sweat-boxes to some regular packer, and bring according to quality from 4 to 6 cents per pound, a price which it is hardly necessary to state, returns the grower a handsome profit.

California Prunes.—The outturn this year we estimate at one million seven hundred and fifty thousand pounds. This was the "off" year for prunes, and the crop was some less than last year, though in size the fruit

generally run larger and better, and has brought greatly enhanced prices, so the deficiency in quantity has to a considerable extent been recouped by the increased value. We write on the California prune industry with as much pleasure as we do on raisins, for both are in the front rank of great California industries. The California prune is not really in competition with the imported French prune, because it is a better fruit, of better flavor, and of better keeping qualities. The far western trade discovered this fact some time since, with the result that our prunes have not only largely supplanted the imported prunes in the great western markets, but for the past two years they have actually sold on the average at from 1 to 3 cents a pound above the French prune. The California prune is like a date, and when cut, of a bright golden color; when cooked, it is superior to anything grown elsewhere.

All first class packers now grade their prunes with satisfaction to the trade. The growers this year realized from 2 to 2½ cents per pound for the fresh fruit, showing a splendid profit, and when packed prices have ruled from 9 to 14 cents, according to sizes. From the large number of new orchards coming yearly into bearing, we can safely estimate the product in 1888 at three million five hundred thousand pounds, or say fifteen million pounds of the green fruit.

The Santa Clara Valley is the home of the best California prunes.

California German Prunes.—While California can produce a nice German prune, the French prune is so much superior that the German is neglected. The result is that little or no progress has been made in the production of the German prune in this State. The tree here produces abundantly, but the price is so much lower that growers prefer to plant the French prune. Some little has been done in setting out new orchards in this fruit, but we cannot say that the outlook is very promising for a profitable market. The imported Turkish and Bulgarian prune, dirty trash, which are imported here in casks from Europe, supply what trade there is on this coast for a cheap prune. We think, however, that the day is not far distant when this nasty mixture from Europe will cease to be quoted in this market.

Sun-dried Apples.—The low prices that have prevailed for the last two or three years for our sun-dried apples, have very seriously curtailed the product, as there was no money to the producers in putting them up. What drying has been done in the last year or two has been in the way of evaporated bleached apples, something for which we are profoundly thankful. As we mentioned in our last annual review, the day of sun-dried apples is undoubtedly rapidly passing by, and although the evaporated commands considerable more money, they are so much better and more cleanly and really cheaper for domestic use, that two thirds of the trade now call for the evaporated fruit.

We hope the time is near at hand when we shall see no more sun-dried apples offered for sale.

Sun-dried Peaches.—We report a large increase in the product over 1886. The eastern crop, however, was short this year, and California was subjected to a most extraordinary demand from all quarters, which principally cleaned up the whole crop at good prices to the producers. In addition to this the demand for our green peaches this year, for canning purposes, also was equally heavy, and growers found no difficulty in selling either to the canners or to the driers, at prices which returned them handsome profits.

The quality of the dried peaches this year, as a whole, has run good, although in some sections the product was damaged by untimely showers which blackened the fruit during the drying process. There is no fruit produced in the world in the way of a peach like the California in size or in flavor, and when properly prepared for market it realizes the highest prices in all the markets of the Union. The market for our dried peaches and dried apricots, of all kinds, for that matter, has been and is constantly extending, and where heretofore we have been largely dependent upon one or two large western markets to move our surplus, the demand is now becoming universal all over the Union. The planting of peach orchards still continues in every portion of the State, but with the increased demand before noted for our green and dried fruit, not only from our own country but from every country in the world, there is no possible chance of overdoing the business, although the fancy margins that have been realized by many of our large orchards may not always be obtained.

Sun-dried Pitted Plums.—Such low prices have been ruling on this fruit for two or three years that growers became very much dissatisfied and fed their fruit to the pigs, let it rot, or sold it to the canners at whatever they could get for it. The result was a small outturn of dried pitted plums. This, however, brought about increased prices, and what packers realized for such stock as was prepared, should show a nice margin to the producers. We go out of the year with a very light stock here, and it is quite likely that another year supplies will be more ample. For trade who like a tart fruit, there is nothing grown anywhere superior to the California pitted plums.

Sun-dried Pears.—We report a small quantity dried this year, owing partially to a shortage of the crop of proper varieties and also a good demand for canning purposes; like apples, the demand for pears nowadays is largely running on evaporated bleached fruit, which have a fair steady jobbing demand and brings fair returns to the producer. We recommend that all growers of this fruit bleach it, and the common sun-dried unbleached fruit be done away with.

Dried Grapes.—There has been quite a large increase in the quantity of this fruit this year. The California dried grape not only makes a good cheap cooking raisin, but it also makes an excellent table sauce when properly prepared. It is produced principally from the Mission and Zinfandel grape, and as its excellence is becoming better known, the trade for this fruit is constantly extending. Putting these grapes up dried, affords another outlet to all growers of grapes of these varieties who find a dull market in selling them for wine purposes. It also gives them an outlet and relieves them from any squeezing on the part of the wine makers.

Sun-dried Nectarines.—No finer fruit is grown in California than the nectarine. In fact, it is one of the choicest produced in this State. It has, however, been greatly neglected by the trade generally. This principally has come, no doubt, from a lack of knowledge of the superiority of this fruit. Wherever the nectarine has been used, it is noticed that duplicate orders follow. In our opinion the nectarine, in flavor, is superior to the apricot or peach, and we hope to see the time when they will rank equal in price with either of these fruits and be taken freely. There are many sections in California where the nectarine is produced most abundantly and of the most luscious fruit.

California Figs.—The product this year is very fair, but on account of low prices less attention than formerly has been paid to drying them. The California black fig, outside of its color, which is against it, is equal, in our opinion, to the imported fig for all purposes of consumption.

Their color, however, is against them. The white Smyrna fig is being grown in California in certain sections and is doing well, and we hope to see a large increase in this industry, as there is no question whatever that California can produce a white fig equal to anything that comes from abroad. We have seen some white figs produced in the central and southern portions of the State, that were handsomer and finer than anything that we have ever seen from Smyrna.

Sun-dried Apricots.—While the output of this fruit for the past season has been in excess of last year, the demand has been so good from the East that the whole stock has been rapidly absorbed, and at present there is little or nothing left in this State for sale.

Evaporated Apples.—We report an increase in the product of this fruit over last year and generally of a better style of packing. This is very commendable. The sale for the California evaporated apples is principally confined to this coast, and for shipment to Australia and the Pacific islands. Our apples are not as tart as the eastern apples, and as a general rule not as carefully put up, and for this reason, as yet, they have not made much progress and met with much favor in England, but as we are now beginning to put up apples from the foothills, and are yearly improving in our style of packing and carefulness in selecting, we have no doubt that the time is not far distant when California evaporated apples will be found side by side in the London and Liverpool markets with the apples from New York and Maine.

Evaporated Bleached Apricots.—As will be seen by our figures, there has been a very heavy increase in the production of this fruit over 1886. This was a good year for apricots, and while the demand from the canners was something extraordinary, it was equaled or exceeded by the demand from the driers in all sections of the State. The product as turned out, we are glad to state, also exceeded in quality, in appearance, and in style of packing anything before produced in California. As large as this product was, the great bulk of it has already been sold and gone into consumption. The apricot is a fruit particularly indigenous to California, and as its merits become known, from a small trade at the beginning and a trifling demand, it has grown, year by year, until there is no city to-day in America of any consequence but what uses the California apricot either in a canned or dried state. Neither is the market for this fruit confined to our own country. Now evaporated and canned apricots can be found in most of the great European cities. While new orchards in various portions of the State are being planted and new ones yearly coming into bearing, there is, in our opinion, not the slightest chance of ever overdoing the apricot business. While it is true that prices may and will undoubtedly recede as the product increases, it is always bound to pay the growers a good round margin on their investment. The price of the green fruit this year ruled from $1\frac{1}{4}$ cents up as high as 2 cents per pound, and for the dried product from $13\frac{1}{2}$ to 17 cents. In the face of this being a very abundant year, next season we may look for a lighter crop.

Evaporated Peeled Peaches.—As will be noticed, the product this year is largely in excess of last season, but the bulk was sold for eastern shipment early in the season, and has largely gone into consumption. We are pleased to note that peeled peaches in California are being yearly indulged in on a more larger scale, for the reason that we believe peeled peaches pay the producers better, and while the trade is not as large as for the unpeeled, the demand from all portions of the country is constantly on the increase. We would recommend for the coming year a more general putting up of this fruit in two and five-pound packages, as in that style the consumption will be increased in all portions of the country.

Evaporated Unpeeled Peaches.—A very heavy increase is noted over the product of last year of this fruit, and generally of better quality and more tastefully packed. The California evaporated unpeeled peach has really no competitor anywhere, because it is of better flavor and finer generally. Notwithstanding the heavy quantity put up this year, the stock now carried in California is extremely light, and not enough more than will be required for the running coast demand from now until the end of July. While the trade on these goods formerly was principally derived from two or three large western markets, at the present time the sale extends all over the Union, and the evaporated peaches of California, like the canned fruit, are being sought and sold in all the markets of the Union. There is no possibility whatever of overdoing it, as the consumption is increasing yearly far ahead of the production.

Evaporated Pitted Plums.—What we have said of the sun-dried will apply to the evaporated. The low prices last year very seriously curtailed the putting up of this product this year. What has been prepared, however, has been of nice quality and has brought figures highly remunerative to the growers. We can hardly expect, however, any very heavy demand for evaporated plums, for the reason that the California sun-dried pitted plum is of such excellent quality that at the difference in price the majority of the trade will take the fruit.

California Walnuts.—We estimate the product this year at one million five hundred thousand pounds, which shows a very gratifying increase over 1886. It is also a pleasure to note that the best California walnuts, properly bleached, and due attention being paid to careful grading and curing, are now in a large measure supplanting the imported article. It was only a few years ago that a California walnut, even that was as good as the best imported, as far as eating quality, was sold in the eastern and western markets at anywhere from 3 to 6 cents per pound under the imported. This, however, is now being changed, and discriminating dealers will take our best walnuts at prices equal to, and in many instances exceeding the imported goods, and there is no reason why they should not, as they are not only fresher than anything that comes from abroad, but are of better flavor, and the quality certainly is not inferior. California offers a fine field for the production of these nuts, and while there are a good many new orchards being planted, we do not think the attention is being devoted to this industry that is warranted, by the fact that we have the United States for a market. The best walnuts come from Southern California.

California Almonds.—The product this year is a light one owing to various causes, but the quality has never been better. The low prices prevailing in New York for the imported almonds, has not left much margin

of profit for the California almonds, but it is with pleasure that we state that like our walnuts, we find a wide-spreading and increasing demand every year. The Tarragona imported almond has been the principal nut in favor by the eastern trade. This is a very large and thick-shelled nut, and is not to be compared with the soft-shell California almonds in any way. It being of larger size, and there being nothing else to compete with it, it has taken the bulk of the trade, but there is no question that it has seen its best days, and that the soft-shell almonds of California are rapidly taking its place. Dealers are generally finding out, and consumers especially, that paying 14 or 15 cents per pound for a shell is a pretty dear price. The shells of the California almonds are very light, and the dealer principally in buying these nuts, gets meat and not shells. A good many new almond orchards are being planted throughout the State, and it is only a question of time when we shall be able to supply the trade all over the Union with these goods. There are good years and bad years in this industry, but taking it one year with another, an almond orchard pays the owner good returns.

Extracted Honey.—This was the off year in the extracted honey industry, and we report quite a large decrease in the product from last season, and the quality generally, as far as color is concerned, has not been as good. On account of the light crop, however, prices have ruled from 25 to 50 per cent better, so those producers who had good crops have received very satisfactory returns. We do not think there is any question anyway, but what the honey of California is the finest produced in the world, both as regards color and flavor. Our bee men have had many discouragements to contend with, the principal among which is the competition with the low grade black honey of Cuba, as well as the Chili honey, but as the consumers get to using California honey more, they call for it and are willing to pay advanced prices. One thing can be said in regard to California honey, and that is, nine cases out of ten, shipments made from here are absolutely pure honey. The article has been and is still so reasonable in price, that there is nothing that it could be adulterated with, or that would pay to do so. We are pleased to note that our suggestion made last year in regard to dispensing with old oil cans and cases and using new cans and cases, has been to some extent adopted, but there is still considerable room for improvement in this matter. While the old tins as used here are thoroughly cleaned with potash and, as a rule, are all right, they have a very unrepresentable appearance, and it would pay our producers much better, and they would get enough more for their honey, if they would put it up in new cases and cans.

California Comb Honey.—Like extracted honey, this product is also reduced in quantity this year. The quality, however, has been very good, and has brought much higher prices. Our suggestion made for several years past to put up this honey in one pound frames instead of two pound, we are glad to note is being gradually adopted. As a general proposition, the one pound frames are preferable, especially when the goods are to go East. On this coast, and in the Territories, two pound frames are all right enough, as the average consumer there is willing to buy that quantity, but for the far eastern trade, where things are brought down to a finer point, one pound frames are much more desirable, and sales are frequently lost on California comb honey from the fact that it is put up in two pound frames. Notwithstanding discouragements now and then, the honey

industry of California is bound to increase year by year, as there is no more favorable location in the world to produce honey than in this State.

CONCLUSION.

In closing this, our thirtieth annual review, we wish again to thank our many friends in all portions of the State for the kindly assistance they have lent us as usual in preparing our figures. We get up this review once a year at our own expense, and with considerable work and thought, for the benefit of California at large and particularly for the benefit of every fruit producer therein. It is intended to draw the attention as far as possible of the outside world to the wonderful development of California, and the chances for a home that it affords to the rich and poor man alike. That this review has not been altogether unsuccessful in its mission, is proven by the fact that it is copied throughout the world, and that we have inquiries for copies not only from all portions of the Union, but from the most distant portions of the globe as well. It also affords us pleasure to state that the year now about closing has been one of unexampled prosperity to California.

The immigration to this State is increasing monthly by thousands and tens of thousands, and wealth is flowing in by millions. Business is good. Nearly every product of the soil has shown splendid returns to the producer and in many instances has led to almost a competency.

Property is everywhere enhancing in value. We have already had splendid rains, and the outlook for 1888 is now more brilliant than anything in the past history of this great commonwealth of California.

BEET SUGAR.

OFFICE OF THE WESTERN BEET SUGAR CO., 327 MARKET STREET, }
SAN FRANCISCO, December 28, 1887. }

EDWIN F. SMITH, *Esq.*, *Secretary State Board of Agriculture:*

DEAR SIR: The inquiries regarding the cultivation of sugar beets in California, and my intentions as to the erection of factories, have become so numerous that it is utterly impossible to send a separate written reply to each individual. I have, therefore, framed this letter, which embraces all the necessary information that I am prepared to give at the present time.

My belief is that the cultivation of sugar beets will soon be one of the largest agricultural pursuits, not only in California but in all the Western States and Territories, both soil and climate being more favorable to the purpose than even in Germany. The failure in the past to manufacture sugar from beets, on a paying basis, has been mainly due to the absence of the best available machinery. The beets that were grown have been suitable for the purpose but the machinery has been deficient. This, however, will be obviated in the future, as I have secured the right for the whole of the United States, of all the latest mechanical appliances and manufacturing methods that are now in use in Germany, which is the largest and most successful beet sugar producing country in the world.

The soil best adapted for growing sugar beets is a rich, sandy loam. Beets must not be grown successively in the same soil, and they must *never* be manured. Land that has produced a crop of beets should be planted in grain the next year, *then* manured and planted again in grain, and in the third year it may be replanted with beets, but it must not be manured that year. Thus a farm of one hundred and fifty acres would enable a farmer to grow fifty acres of sugar beets in each year, and I think I may safely say that the fifty acres planted in beets will prove more profitable each year than the whole of the other hundred acres that are producing grain at present prices. The price of beets will be determined by the percentage of saccharine matter that they contain, a few beets being taken from each load, as delivered at the factory, for analysis—the result of that analysis forming the basis upon which each load shall be paid for. By this means the best beets will obtain the best price, and the farmer will be encouraged to careful cultivation.

I propose to erect one factory at Watsonville, at a cost of about \$400,000, which will be in full operation by September 1, 1888. This factory will consume three hundred and fifty tons of beets in every twenty-four hours, but be doubled by the following year. At present it will require one hundred cords of wood and seven tons of lime daily during the four or five months that it is in operation. This will show the necessity for having good supplies of wood and lime close to the factory, which should also be near to a line of railroad or to suitable water facilities for shipment of raw sugar to San Francisco. The lime is a good fertilizer and can be returned to the soil again. The pulp from the beets can be fed to cattle and will keep them in fine condition.

Before erecting a factory anywhere I must be guaranteed that at least two thousand five hundred acres will be planted in beets *every year* for a definite number of years. I must also be assured of sufficient supplies of wood, water, and lime in the neighborhood, and good transportation facilities. It requires from fifteen to twenty pounds of beet seed to plant an acre of ground. The seed costs 10 cents per pound in Germany, and would probably cost 12 cents per pound here. I am importing twenty-five tons, which are now on the way, and some of this will be distributed gratuitously, in small packages, to those who desire to experiment on their farms. But I shall expect in return that those who do make such experiments, from seed that I give them, will send me samples of the beets that they grow, and the soil in which they are grown, for the purpose of analysis. It must be remembered that the large beets are not the best for making sugar. If the soil be *very* rich the beets should not be planted more than *four* inches apart in the rows. If the soil be of good quality the beets should be six inches apart in the rows, and eight inches apart if the soil be not so good. The rows should always be fourteen inches apart from one another.

A factory will cost about \$325,000, but, for the first one, some of the machinery must be imported from Germany. Subsequently I anticipate no trouble in its being manufactured in this country. A site of from thirty to forty acres is necessary wherever each factory is erected, so as to give ample room for the large quantity of machinery and buildings, also for the prompt handling of the great number of wagons that will be delivering beets at the same time, so that the wagons may not be delayed and the work of the farmers impeded.

It is impossible yet to determine where factories should be located. I have received invitations from all sections of California, Oregon, and Washington Territory to visit different localities, and I will endeavor to do so as quickly as possible. From the foregoing remarks, however, you will be able to form an idea of what is essential to the erection of a factory. Such information as I have indicated, if forwarded to me in conjunction with samples of soils and beets, will materially assist me in locating the sites for future factories. I am, sir,

Yours very truly,

CLAUS SPRECKELS, President.

PLEURO-PNEUMONIA.

U. S. DEPARTMENT OF AGRICULTURE,)
WASHINGTON, D. C., February 9, 1888.)

EDWIN F. SMITH, *Esq.*, *Secretary State Board of Agriculture, Sacramento, California:*

SIR: Your favor of the eleventh ultimo has been received, but owing to the pressure of work in preparing reports for Congress I have been unable to give it earlier attention. I am glad to notice that interest is being taken in California in relation to suppressing contagious diseases and preventing their introduction. The Governor of California has accepted the rules and regulations prepared by me on April 15, 1887, and promised the co-operation of the executive authorities of the State of California in their enforcement. I inclose, in accordance with your request, certain measures suggested by me to the Legislatures of several States for enactment, as providing the best means for accomplishing this work. The first Act inclosed, marked "A," has become a law in the States of Virginia, New York, New Hampshire, Massachusetts, Rhode Island, and Illinois. The Act marked "B" has just been prepared and forwarded to the Legislature of New Jersey. In the absence of all legislation on this subject in California, I am of the opinion that the proposed Act sent to New Jersey is the one best suited for the needs of your State.

Hoping that you will be successful in directing the attention of your Legislature to this subject, and securing the enactment of an effective law, I am,

Very respectfully,

NORMAN J. COLMAN,
Commissioner of Agriculture.

DEPARTMENT OF AGRICULTURE,)
WASHINGTON, D. C., January 20, 1888.)

Hon. T. W. PALMER, *Chairman Senate Committee of Agriculture and Forestry:*

SIR: In response to the request of your committee for my views in regard to legislation for the suppression of pleuro-pneumonia, I have the honor to state:

In the consideration of proposed legislation to eradicate this disease from among the cattle herds of the United States, it is necessary to have in mind the method of work which is essential to successfully accomplish this purpose, so that the legislation may properly confer the required power to carry this method into effect.

During the first three years of the existence of the Bureau of Animal Industry, its powers were so restricted and its appropriations so limited, that its work was confined mostly to investigating the extent of pleuro-pneumonia in this country. During the past year the powers of the bureau were increased, as well as the amount of its appropriation, so that it has

successfully introduced the only method which can be effective in extirpating this disease.

The following may be briefly stated as its method of work:

First—Investigations to determine the existence of pleuro-pneumonia in any suspected locality in the country.

Second—The immediate quarantine and isolation of the herds in which the disease is found. If any considerable amount of disease is discovered in any district of any State so that there is grave danger of the disease spreading to other districts, the immediate quarantine of that district is enforced, as well as the prohibition of the movement of any animals from one herd or premises to another within the district, the movement of any cattle out of or into the district, or of any cattle to be upon any highway, or upon any uninclosed land within said district. Provided, however, that animals may be moved upon a written permit signed by an Inspector of the Bureau of Animal Industry. As soon as the quarantine order has been made, the immediate inspection, tagging, and numbering of every bovine animal in the district, and the keeping of a record of the same, and a record of all permits of all animals moved by permission, so that the bureau may have a complete control of the movements of all cattle within the district.

Third—The condemnation and slaughter of all animals found to be diseased, or exposed to disease within said district, and the thorough disinfection of all premises where such animals have been, or on which contagion is suspected to exist. At the same time, inspection and post-mortem examination is made of every animal slaughtered within the district during the term of quarantine, whether such animals are purchased and slaughtered by order of the bureau, or whether they are killed by butchers or others for their own uses.

The above described plan is the one now being enforced by the Bureau of Animal Industry with the aid of State laws in States coöperating with the bureau, and is in force in the States of Maryland, New Jersey, and New York at the present time, these being the only States where pleuro-pneumonia is now known to exist.

The principal authority or power by means of which the Bureau of Animal Industry is enabled to carry out this method of work comes to it from the Appropriation Act, approved March 3, 1887.

In any proposed legislation to be enacted Congress should clearly understand that this method of work is absolutely essential to wipe out the disease, and that any law which may be passed, which falls short in any one particular, as described above, will fail of its purpose, and money expended under it will be thrown away. The first consideration which your committee, it seems to me, should pass upon is, whether this work is to be continued with the coöperation and consent of the several States in which the disease may exist, or whether it is to be done solely and alone by national authority under that provision of the Constitution which empowers Congress "to regulate commerce with foreign nations, and among the several States." From my judgment and the experience that I have had in this work, I believe that the plan of State coöperation is preferable to the one which relies solely upon national authority.

There exists a disposition on the part of many of the States to resist what they believe to be encroachments of the National Government upon their State rights, and in this instance upon the police powers of the State, which heretofore have had sole jurisdiction in protecting the State from contagious disease among their domestic animals. In addition to this feeling held by State authorities there will be encountered the resistance of indi-

vidual owners who will take every opportunity to deny the authority of persons who attempt to quarantine their herds or kill their animals, and by suits at law, injunctions, etc., will seriously interfere with the successful execution of the national law. This resistance would, in my judgment, be exceedingly detrimental to the cattle interests of the country—would temporarily stop the work—and it might practically stop all work of extirpation until the constitutional question of the right of the National Government to do this work within a State without the consent of a State, is passed upon by the Supreme Court of the United States. It is unnecessary to comment upon the great danger which this condition of affairs would bring to the cattle industries of the country, and the deplorable consequences that might result from the suspension of the present work, and allowing this disease to spread without check or hindrance, while waiting for the judicial construction of the law. The present work in extirpating this disease being done by the Bureau of Animal Industry, is going on smoothly, harmoniously, and effectively by means of State coöperation. In the State of Maryland, where the disease has existed for many years, the State laws are ample to control this plague in the manner adopted by the bureau in its work, and the State authorities have conferred upon the bureau and its officers full authority to work under their laws. In the State of New York the Legislature has passed a special Act giving to the bureau the power of inspection, quarantine, and condemnation of animals, with authority to enter upon any ground or premises in that State for these purposes, and has made the officers of the bureau peace officers, clothed with all the powers and rights incident to such authority. In addition, the Governor, by virtue of a previous Act, has, at the request of the bureau, made such executive orders as makes it a misdemeanor for any person to violate the terms of quarantine. In New Jersey, the State officers are coöperating to the full extent of their authority, and the method of quarantine adopted by the bureau is being enforced. To perfect the State law of New Jersey, which has some peculiar features which it were better for this work to have changed, I have sent to the Legislature of that State a proposed Act of coöperation, which I take the liberty of inclosing to your committee, so that it may see the character of the State legislation the bureau is endeavoring to secure. I therefore believe it best that this work should be continued upon the same lines it is now working, and that it will be unfortunate and ill-advised if any new and untried plan should be adopted.

As the power to do this work now being done by the Bureau of Animal Industry, comes in a large measure from the Appropriation Act of March 3, 1887, it would be advisable that the organic Act of the bureau should be so amended as to include this authority and thus make it permanent, and not dependent on temporary legislation from year to year. I would suggest, therefore, that certain amendments be made to the Act of May 29, 1884, as follows:

In the first section of the Act the limitation of the force of the bureau to "twenty (20) persons at any one time," should be stricken out. The same section should give, in addition to the powers now granted, the right to inspect, quarantine, and disinfect all animals or premises, and the right to enter upon any grounds or premises for these purposes, also the right of condemnation, appraisement, compensation, and slaughter of any animals found to be diseased or exposed to the disease.

In section three of the present Act, the limitation of the expenditure of money to investigation, disinfection, and quarantine measures, should be

removed, and authority given to expend money for all the purposes mentioned in the first section.

Section six should be so amended that no person can move any bovine animals from a district declared in quarantine by the Commissioner of Agriculture to any other State or Territory, without a permit from an Inspector of the Bureau of Animal Industry.

Section nine should be amended so that it shall be the duty of the several United States District Attorneys to defend all officers of the bureau sued for acts committed by them in the discharge of their official duties, in addition to what the section now provides the District Attorneys shall do.

A new section should be added to the Act, providing that the Commissioner of Agriculture shall declare in quarantine all districts in which pleuro-pneumonia is found to exist, and that notice thereof shall be published in one or more newspapers. Also, upon the extirpation of the disease, he shall give notice in like manner of this fact, and of the removal of the quarantine.

Another section should be added, providing that whenever the Commissioner of Agriculture ascertains that from any cause it is impossible to enforce the methods adopted for the extirpation of pleuro-pneumonia in any State, and he believes that there is danger of its spreading to other States and Territories, he shall, with the approval of the President of the United States, declare said State to be in quarantine, and thereafter it shall be unlawful to move any bovine animal in or out of said State, and any person so doing shall be guilty of a misdemeanor, and punished by fine or imprisonment, or both. Provided, that animals may be moved in or out of said State upon a permit given by an Inspector of the Bureau of Animal Industry, in accordance with such regulations as may be adopted by the Commissioner of Agriculture, to any other State or Territory, without a permit from an Inspector of the Bureau of Animal Industry.

Section nine should be amended so that it shall be the duty of the several United States District Attorneys to defend all officers of the bureau sued for acts committed by them in the discharge of their official duties, in addition to what the section now provides the District Attorneys shall do.

A new section should be added to the Act, providing that the Commissioner of Agriculture shall declare in quarantine all districts in which pleuro-pneumonia is found to exist, and that notice thereof shall be published in one or more newspapers. Also, upon the extirpation of the disease, he shall give notice in like manner of this fact and of the removal of the quarantine.

Another section should be added, providing that whenever the Commissioner of Agriculture ascertains that, from any cause, it is impossible to enforce the methods adopted for the extirpation of pleuro-pneumonia in any State, and he believes that there is danger of its spreading to other States and Territories, he shall, with the approval of the President of the United States, declare said State to be in quarantine, and thereafter it shall be unlawful to move any bovine animal in or out of said State, and any person so doing shall be guilty of a misdemeanor and punished by fine or imprisonment, or both; provided, that animals may be moved in or out of said State upon a permit given by an Inspector of the Bureau of Animal Industry, in accordance with such regulations as may be adopted by the Commissioner of Agriculture for the safety of the cattle interests of other States.

Another section might be added, providing that whenever in the judgment of the Commissioner of Agriculture it is necessary to prevent the introduction of a contagious disease into any State or Territory from any

other State or Territory, or foreign country, he may adopt measures of quarantine of cattle entering into such States, and any violation of such measures shall be a misdemeanor.

Referring to Senate Bill 945, I desire to call the attention of your committee to some of the defects contained in this bill which will render it ineffective for the purpose it seeks to accomplish, and which make it of less value than the Act under which this work is now being done.

The second section authorizes the establishment of quarantines of animals, places, premises, or localities. Nowhere in the bill is the violation of such a quarantine made a misdemeanor, nor is any penalty provided. It amounts merely to a paper quarantine without power or authority to enforce the same, and is practically of little value. While under the present law the Bureau of Animal Industry has the power to establish quarantines, and no penalty is provided, nevertheless, the bureau is able to enforce these quarantines by means of State coöperation. The present bill does not provide for taking advantage of the State laws and their penalties, and is therefore to that extent inferior to the Acts under which the bureau is now working. This is a radical defect, and in my judgment this work cannot be successfully carried on under such conditions.

The sixth section provides for the slaughter of animals, but it expressly states that no animal shall be killed without the consent of the owner, but shall be kept in rigid quarantine. The natural query is how can this rigid quarantine be enforced? There is no penalty for its evasion, consequently who will respect it? Under the present system of the bureau, we slaughter the animals even if the owners refuse to accept the compensation our appraisers offer them: as in that case we call upon the State authorities to condemn the animal in accordance with State regulations.

It is unnecessary to call attention to any further defect in this measure, for the reason that the two already named are of so fatal a character that the bill, instead of improving the legislation now existing, would in reality destroy all hope of effective work, would jeopardize the cattle interests of the country, and undo the good work that so far has been accomplished in stamping out this disease.

I have the honor to remain, very respectfully,

NORMAN J. COLMAN,
Commissioner of Agriculture.

("A.") LAWS OF THE STATE OF NEW YORK RELATING TO CONTAGIOUS
DISEASES OF DOMESTIC ANIMALS.

[Chapter 155, of the Laws of 1887.]

AN ACT TO COÖPERATE WITH THE UNITED STATES IN THE SUPPRESSION AND EXTIRPATION OF
PLEURO-PNEUMONIA.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Governor is hereby authorized to accept, on behalf of the State, the rules and regulations prepared by the Commissioner of Agriculture, under and in pursuance of section three of an Act of Congress approved May twenty-ninth, eighteen hundred and eighty-four, entitled "An Act for the establishment of a Bureau of Animal Industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," and to coöperate with the authorities of the United States in the enforcement of the provisions of said Act.

SEC. 2. The Inspectors of the Bureau of Animal Industry of the United States shall have the right of inspection, quarantine, and condemnation of animals affected with any contagious, infectious, or communicable disease, or suspected to be so affected, or that have been exposed to any such disease, and for these purposes are hereby authorized and empowered to enter upon any ground or premises. Said Inspectors shall have the power

to call on Sheriffs, Constables, and peace officers to assist them in the discharge of their duties in carrying out the provisions of the Act of Congress approved May twenty-ninth, eighteen hundred and eighty-four, establishing the Bureau of Animal Industry; and it is hereby made the duty of Sheriffs, Constables, and peace officers to assist said Inspectors when so requested; and said Inspectors shall have the same powers and protection as peace officers while engaged in the discharge of their duties.

SEC. 3. All expenses of quarantine, condemnation of animals exposed to disease, and the expenses of any and all measures that may be used to suppress and extirpate pleuro-pneumonia, shall be paid by the United States, and in no case shall this State be liable for any damages or expenses of any kind under the provisions of this Act.

SEC. 4. This Act shall take effect immediately.

("B.") AN ACT TO COÖPERATE WITH THE UNITED STATES IN THE SUPPRESSION AND EXTIRPATION OF PLEURO-PNEUMONIA.

1. *Be it enacted by the Senate and General Assembly of the State of New Jersey*, That the Governor is hereby authorized to accept on behalf of the State the rules and regulations prepared by the Commissioner of Agriculture, under and in pursuance of section three of an Act of Congress approved May twenty-ninth, eighteen hundred and eighty-four, entitled "An Act for the establishment of a Bureau of Animal Industry, to prevent the importation of diseased cattle, and to provide for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," and to co-operate with the authorities of the United States in the enforcement of the provisions of the said Act.

2. *And be it enacted*, That the Inspectors of the Bureau of Animal Industry of the United States shall have the right of inspection, quarantine, and condemnation of animals affected with any contagious, infectious, or communicable disease, or suspected to be affected, or that have been exposed to any such disease, and for these purposes are hereby empowered to enter upon any ground or premises. Said Inspectors shall have the power to call upon Sheriffs, Constables, and peace officers to assist them in the discharge of their duties in carrying out the provisions of the Act of Congress, approved May twenty-ninth, eighteen hundred and eighty-four, establishing the Bureau of Animal Industry, and of this Act, and it is hereby made the duty of Sheriffs, Constables, and peace officers to assist said Inspectors when so requested; and said Inspectors shall have the same power and protection as peace officers when in the discharge of their duties.

3. *And be it enacted*, That whenever animals have been condemned by an Inspector of the Bureau of Animal Industry as being diseased, or as having been exposed to disease, they shall be appraised in the manner provided by section three, of chapter two hundred and twenty-five of the laws of New Jersey of eighteen hundred and eighty-four, and slaughtered. The amount so appraised shall be limited to the sum of one hundred and sixty dollars for registered thoroughbred animals, and fifty dollars for all others; one half of the appraised value of diseased animals, and the full appraised value of exposed animals, is to be paid to the owners by the Department of Agriculture of the United States upon the approval of the certificate of appraisement by the State Board of Health.

4. *And be it enacted*, That it shall be lawful to sell for food the carcass of any animal condemned and slaughtered by the Bureau of Animal Industry, provided that the Inspector of the Bureau of Animal Industry making the post-mortem examination on such animals shall certify the same not to have been diseased.

5. *And be it enacted*, That whenever the Inspectors of the Bureau of Animal Industry find that contagious pleuro-pneumonia exists among cattle in any city, township, or county of this State, and the Commissioner of Agriculture of the United States believes there is danger of the spread of said disease to other districts, he is hereby authorized, with the approval of the Governor of the State, to place said city, township, or county in quarantine. Notice of said quarantining shall be published once a week during the continuance of the quarantine in a newspaper published in the district quarantined, and thereafter it shall be lawful for the Bureau of Animal Industry to cause all neat cattle in such district to be numbered, tagged, and registered; and all persons are hereby prohibited, after notice given as aforesaid, from moving any cattle from one herd or premises to another within said district, and from allowing any cattle to be upon any highway or upon any uninclosed land within said district, and from moving any cattle out of or into said district without a permit signed by an Inspector of the Bureau of Animal Industry; and from and after notice given as aforesaid all persons keeping cattle in any such district are hereby required to give immediate notice to an Inspector of the said bureau of the sickness or death of any cattle belonging to them or in their possession; and from and after notice given as aforesaid all persons intending to slaughter animals must give notice to an Inspector of said bureau, and all animals must be slaughtered in the presence of an Inspector of said bureau, who will make a post-mortem examination on the animals slaughtered, and if on such post-mortem examination said animals are found free of disease they may be used for purposes of food, but should said animals or any of them be found diseased, the animals so found diseased shall be buried or sent to a rendering establishment.

6. *And be it enacted*, That any person or persons, moving or allowing to be moved, or to stray, any neat cattle from premises placed in quarantine by an Inspector of the Bureau of Animal Industry, or placing on said premises so quarantined, or among animals so quarantined, any bovine animals, shall be guilty of a misdemeanor and fined therefor to an amount not exceeding one hundred dollars.

7. *And be it enacted*, That when any city, township, or county shall be placed in quarantine as provided in section five of this Act, any person or persons who shall willfully move any cattle from one herd or premises to another in said quarantined district, or shall allow any cattle to be upon any highway or upon any uninclosed land within said district, or shall move into or out of said district any cattle, without a permit signed by an Inspector of the Bureau of Animal Industry, shall be guilty of a misdemeanor, and, upon conviction, shall be punished by a fine of not less than one hundred dollars nor more than one thousand dollars, or by imprisonment for not more than one year, or by both such fine and imprisonment.

8. *And be it enacted*, That all expenses of quarantine, condemnation, and slaughter of animals diseased, or exposed to disease, and the expenses of any and all measures that may be used to suppress and extirpate pleuro-pneumonia, shall be paid by the United States, and in no case shall this State be liable for any damages or expenses of any kind under the provisions of this Act.

9. *And be it enacted*, That this Act shall be in force from and after its passage.

AN ADDRESS

DELIVERED AT THE BUTTE COUNTY CITRUS FAIR, THURSDAY, DECEMBER 22, 1887.

By HON. C. S. YOUNG, of Reno, Nevada.

A few hours ago, on my way to this Fair, I passed over the deep snow banks on the Sierras. Let it be remembered, too, that now we stand within a few miles—within seeing distance—of frozen gorges and snow-clad hills. Dropped as we, some of your visitors, have been, from Sierra's icy mountains into the presence of these summer scenes and these golden fruits, we seem to have realized golden visions and romantic dreams, a true account of which would read to our eastern friends like a fairy tale.

The Golden State is indeed golden. The sands which attracted hither the argonauts of '49, were for a time transformed into the yellow money of the ancients, later into fields of golden grain, and now rapidly are transforming into orchards of golden fruits. The land of the Montezumas, whose civilization had over it a dismal cloud and around it a rayless border, now supports a new civilization whose sky is sunshine and whose every prospect is tinged with the golden hues of hope. Auspicious hope! In the sweet gardens around the old mining camps grow not only wreaths for each toil, but golden fruits out from the golden sands.

But in all this stretch of country, famed in romance, from San Diego to Siskiyou, there are no such golden views as to-night at Oroville, and under this canvas tent. Why, I learn myself, for the first time, what means a Citrus Fair. Here, of course, I expected to find fair women and brave men, for I have met the argonauts and other representatives of Oroville all over the Pacific Slope as well as east of the Mississippi. I did not expect to see, however, made out of golden fruits, a dwelling cottage, church of worship, candlestick, door, pyramid, bell, chair, wagon, wheelbarrow, hammock, '49er's complete outfit, beehive, harp, and horn of plenty, yet I find more; I find this immense auditorium, with its numerous artistic figures transmuted into one golden view, the like of which was never suggested to the alchemist, even in his most fanciful dreams. Within the past few years I have crossed the continent many times, visited, for the purpose of sightseeing, every section of this country, New England, the New South, and the New Northwest, but to me the newest and grandest of all sights in nature and art combined which I have ever seen is the first Butte County Citrus Fair.

Under such a clear December sky, in such a summer clime as this, and in the presence of such golden fruits as these on which our eyes this moment feast, who could say that California does not merit the world's golden opinions, and Oroville the cognomen of the "Gem of the Foothills?"

You may talk about the Corcoran Art Gallery, the Boston Art Gallery, and all other galleries, but transport such an art gallery of fruit as this, with a section of such climate and surrounding natural scenery as is here

into the city of New York, and the art galleries of the East would be bereft of their prestige and glory.

Flowers in profusion bedeck these mountains and hills, and are nature's perennial adornments of these winterless valleys. With an experience of a little more than a quarter of a century, this soil raises better wheat than is raised in its native home in Egypt where they have had an experience in wheat raising for fifty centuries. With an experience of half of a score of years are raised here, I am told, oranges equal in quality to those raised on the orange trees seven hundred years old at Santa Sabina in Italy, or to those raised in their native home along the Ganges north of Calcutta.

In this section the soil is peculiarly productive of all the necessities and luxuries of life. Up the hills along the Rhine the women carry fertilizers upon their backs to enrich the soil: along the banks of the Feather River, long years ago, bounteous Nature herself enriched the soil, and in its pristine richness some of this soil is offered, in comparison with its real worth, almost as free as air to him who is willing either to hold the plow or drive.

Along the Rhine are farms stone-terraced, so that every foot of the soil may be made productive and none go to waste; here are great stretches of unfilled acres, which now await only the coming of the home-seeker.

It would seem that for once at least merit must win, for it was only forty-three years ago since the first settlement was made in this county: now it has a population of twenty-five thousand people, and is increasing at the rate of one thousand a year. As scarcely elsewhere on the continent the charming goddesses, Flora, Ceres, and Pomona, hold sway, and will continue to be the presiding genii of these regions for centuries to come. Within the realm of such genii who would not seek a home in the gem of the orange belt?

The bright skies of Italy, like the whitened walls of an ancient palace, have become dimmed with the soot of ages; southern France and Spain have become blighted by the mildew of bigotry and superstition; our "sunny South" has been despoiled by war, pestilence, famine, and other ravages of death; but this western slope, from its evergreen pines on the mountains, to its ever green citrus groves in the valleys, exists now in all its freshness and purity, as on the morning when John C. Fremont first saw the sun peering over the Sierra's summit into these valleys, then awaiting the coming of civilization.

Standing as we do here in a summer's tent, in what are known elsewhere as "bleak December days," and in the presence of such semi-tropical scenes as these, it takes no logician to explain why "westward the course of empire takes its way." Caesar crossed the Rubicon for conquest: William of Normandy the English Channel, to extend the glory of his empire: Peter, the Hermit, led the Crusade across the Bosphorus against Jerusalem, that he might rescue that Holy City from the wicked Saracen. The argonaut of '49 in his "prairie schooner," crossed the American desert, to gather from the famed El Dorado fields golden nuggets to bring back to his family.

The "Eastern tourist" of 1887 crosses over the same old emigrant trail, but in a palatial car, bringing his family with him, to fulfill life's noblest mission, to build a home; an ideal home under splendid skies and in a land where his sunset days may be golden. The highest inspiration which actuates mankind (I mean a love of the home) gives the impulse to the present immigration westward. Now not only all America, but nearly all Europe, forgetful of France, Spain, and Florida, recognizes that in the climate of California is the place for ideal homes.

After his trip around the world, Grant said the happiest homes on earth are in America, and I believe the happiest homes in America are on the slopes, among the foothills, and in valleys along the Sierras. So wandering from a foreign strand and into the orchards, vineyards, and gardens of California, who would not be proud to say, and in every truest sense feel, "this is my own, my native land."

"Oh sweet to dream of a land like this,
Or see it with mortal eyes,
An earthly taste of eternal bliss,
A glimpse into Paradise."

The home which the immigrant seeks hither is the sacred institution, into whose keeping is intrusted the life of this republic. Here, then, there is no spot of ground for the socialist, the anarchist, or the nihilist; here in the purity of this social atmosphere and amidst these rural scenes no such fallen spirits would find congenial company. In this golden sunshine, there is no such antagonistic elements; no, neither serfs as in Russia, lazaroni, as in Italy, nor peons as in Mexico; here every man himself is a sovereign, and may be his own landlord.

Greece and Rome flourished, only when their farming communities were prosperous; and at one time, while in height of Rome's glory, six acres was a farm large enough for the average Roman.

The most cheering feature in California's future prosperity is that the large tracts are cutting up into small farms, and the laborers and not the landlords, own the farms. Were this the condition of the landed property in Ireland to-day, there would be no need of Parnells and O'Briens, and the most humane mission in which the old man Gladstone ever has undertaken would now be successfully ended. If the Irish owned their land as Frenchmen and Americans own theirs, free, happy, and independent would now be the land of Robert Emmet and Daniel O'Connell.

Like the towering heads of Lassen and Shasta, so from rural scenes the heads of men are reared up in greatness. This follows, since every tree and every vine is a teacher; every flower a book of art; every fruit food for scientific thought.

Amidst such scenes of nature as in Butte, but not grander, were reared the Jewish lawgiver; the great general who was called from the plow to become the deliverer of Rome; amidst rural scenes, too, were reared Washington, Jefferson, Adams, Madison, Monroe, Webster, Clay, Jackson, Lincoln, Grant, and Garfield.

As yet this county is less than thirty years old, but long before it celebrates its centennial birthday, I opine that this rich section along the Feather River will have its Arlingtons, Mount Vernons, and Monticellos; Central Parks, Fairmount Parks, and Golden Gate Parks.

With such glorious displays of the products of its soil as have been exhibited at this Fair, and its untold influence in favor of this section for fruit above all others in the Golden State, the day cannot be far distant when Butte County will be universally recognized as the garden of this State of gardens.

"Bear me, Pomona, to thy citrus groves,
To where the lemon and the piercing lime,
With the deep orange glowing through the green,
Their lighter glories blend. Lay me reclined
Beneath the spreading tamarind, that shakes,
Fanned by the breeze, its fever-cooling fruit."

THE EARLY CITRUS FRUITS OF PLACER COUNTY.

Its Record at the Citrus and State Fairs of California.

NEWCASTLE, December 1, 1887.

The Northern and Central California Citrus Fair which was held at Sacramento in January, 1886, was started more as a novelty and as a pastime than for any other purpose. The idea was suggested that a lot of oranges massed together would be a beautiful sight. The suggestion was acted upon, and the result was something not anticipated by even the most fanciful. There were thousands upon thousands of the prettiest golden-hued spheres upon which the sun ever shone. The originators of the affair were not surprised to a greater extent than were those who contributed most largely of their fruits, and who had for years been eating oranges grown upon their own and upon their neighbors' trees. Among the people of Placer County it was tacitly understood that the orange tree would thrive and produce fruit in large quantities, but their success with deciduous fruits had been of such a gratifying nature that it never occurred to them that a new and more profitable source of revenue was at their hands. Not only were they not alive to the advantages of citrus culture, but they had never placed the product of their orange trees in comparison with the product of other sections: but when the Placer oranges were placed side by side with the exhibit of Washington Navel oranges from Riverside, and were pronounced superior in size, beauty, and flavor to the Riverside exhibit, and when they became aware that of all Southern California oranges the Riverside product it considered the best, then they thought Placer County was pretty lucky in making such a display. In a short time the feeling changed into a belief that Placer had done well. After more consideration, it was apparent that the Placer County people were beginning to feel a little elated, and after having received a shower of flattering compliments from private sources and the press, and being generally patted upon the back, they began to whoop and hurrah, and everybody joined with them in their rejoicing.

PLACER'S RECORD AT THE FAIRS.

This Fair was held at a time when the bulk of the Placer County crop had already been marketed—orange shipping that season having commenced at Newcastle as early as the latter part of November. Notwithstanding this drawback, Placer County exhibitors were awarded a fine lot of the most valuable premiums, and the exhibitors returned to their homes elated, and determined to do still better another year. This was about the situation of the orange interest up to January, 1886, in Placer County. The interest awakened in this direction, however, was wonderful, and the immediate demand for orange trees for that season's planting became so great that all the available nursery stock of that variety was at once exhausted, and many were obliged to postpone planting for another season. During the intervening period, between the first Citrus Fair and that

which opened at Sacramento on December 13, 1886, Placer County people learned much relating to the productive capacity of their lands that in a passive sort of manner had previously been noticed by them. As the time approached for the opening of the second Fair, it became noticeable from the press of the different parts of Northern and Central California, that the experience gained at the preceding Fair would be applied to the best advantage by each competing locality, and that a grand showing would be made by all; that each district would put on its gayest habiliments; that a genuine rivalry of a friendly nature had sprung up; that a giant pull would be made—a determined effort to show most decisively to the world which of the many good places in California was the best. The result was all, and even more than was expected. Placer County, at this Fair, made an exhibit, that for size, beauty, and flavor of fruit, and that for tasty and ornamental display, has never been excelled in the State. Placer's exhibit, which was not only the handsomest and largest, but which also included the largest variety of citrus fruits, was awarded the first premium over twenty-one competing counties, for the best display by any county, and to Placer County's individual exhibitors was awarded the greater part of the finest premiums for the best individual exhibits. Out of the ten premiums awarded for the best individual exhibits of oranges by the citizens of the twenty-two competing counties, seven were awarded Placer County alone, as follows, and of the value mentioned after their names: First premium, A. Freitas, Newcastle, \$175; second premium, C. M. Silva & Son, Newcastle, \$125; third, P. Norburg, Penryn, \$80; fourth, A. Moger, Newcastle, \$75; fifth, Dr. J. M. Frey, Newcastle, \$60; ninth, W. R. Strong & Co., Penryn, bronze clock; tenth, W. J. Wilson, Newcastle, Imperial plow. From the above it can be seen that out of the ten premiums mentioned, Placer secured the first, second, third, fourth, fifth, ninth, and tenth, five of which went to Newcastle alone, which place cannot be excelled in California in the production of any kind of fruits.

Placer's achievements at the Citrus Fairs are only a small part of what has been done in this line. Her exhibits at the different District, Mechanics' Institute, and State Fairs, were upon a similar scale to those in the citrus line, and the rewards of premiums received have been on the same liberal scale as at the Citrus Fairs. The exhibit from this county at the State Fair for 1886, when the county secured the first premium of \$500, over all competitors, for the most meritorious exhibit by any county, was, according to competent authority, consisting of members of the press (among whom were representatives of the leading horticultural papers), visitors from abroad, those who had for years attended the leading State Fairs, and the general expression from all sides pronounced it the finest exhibition of the kind ever shown in the United States. There is no doubt whatever that it was all that was claimed for it. This showing, which was the largest of the kind at the Fair, was not awarded first premium for its bulk, but for the general superiority of excellence, as well as the quantity shown. It seemed impossible to ever again equal the colossal beauty of this showing, but it was done by Placer County—not only equaled, but surpassed at the State Fair held at Sacramento in September, 1887.

It is doubtful whether the eyes of man ever before rested upon a more magnificent showing of the most delicious fruits, of such ravishing beauty, exquisite flavor, and excessive quantity, as was there shown upon the tables, strewn upon the shelves, hung upon the walls, suspended in the air, filled and crowded in every nook and corner, and, in fact, under the tables, and hid and stored away everywhere, for the amount was so large

that the State Agricultural Society could not find the required space for it in their immense Horticultural Hall. In order to give the reader an idea that there was a good quantity on exhibit, the statement is here made that from one place alone in Placer County (the Newcastle fruit district) there was shown more fruit than was exhibited from any other county, exclusive of Placer, in California.

To give an idea of the superlative excellence of this fruit, the facts and figures prove that there was not a single entry of fruit for a premium from the Newcastle fruit district at the State Fairs for the seasons of 1886 and 1887, that was not awarded a premium.

The above remarks apply to all the varieties of fruits exhibited, for all are produced there in almost endless profusion, although the peach appears to be in the lead. One variety, which originated in the Newcastle fruit district, known as the McDevitt Cling, has been awarded six first premiums at six consecutive Fairs. This is probably the finest peach in California.

THE ORANGE IN PLACER.

As the object of the present exhibit at Los Angeles is to call attention to Placer County's advantages for the culture of citrus fruits, and as the exhibit is largely made up of oranges, the reader's attention will be again directed to this part of our subject, and some attempt made to show what progress has been recorded in this direction. Placer is to-day the third county in California in the number of orange trees planted out, and Mr. Robert Williamson, of the firm of W. R. Strong & Co., of Sacramento, fruit shippers and dealers in nursery stock, states that there will be planted during the present planting season in Placer County, fifty thousand orange trees. This is a statement from only one firm, who have figures that justify them in making the assertion, and, if time remained for a full investigation, the conclusion might be reached that the above figures would be increased.

In a short work of this kind the limited space precludes the possibility of an extended description of what individuals have accomplished: however, a short mention will be made of a small number in a few places, giving what they have already planted.

Beginning at Roseville, on the Central Pacific Railroad, at an altitude of one hundred and sixty-three feet, will be found scattered here and there many orange trees, which have been planted, from time to time, for ornamental purposes. This was the original intention of all our people up to within the last two years, in setting out this kind of trees. The trees at Roseville have made a thrifty growth and are bearing fine fruits. The same remarks as above apply to the towns of Lincoln and Sheridan, north of Roseville, upon the California and Oregon Railroad.

At Rocklin there are growing a number of fine trees upon the grounds of many of the residents. A small collection of trees at the railroad depot are yearly loaded down with a profusion of the choicest flavored oranges. Adjacent to the town, J. Parker Whitney planted upon his beautiful grounds last year one thousand trees of the most select varieties, many of which have been in blossom and are now bearing a few oranges. Out of this number Mr. Whitney lost only three trees. Only three out of a thousand! Just think of it. Where can a better showing be made? Mr. Whitney proposes, during the present season, to plant quite extensively in citrus fruits, and will set out from ten thousand to thirty thousand, owing to the supply to be had. He has already opened correspondence with some of the leading Florida nurserymen for the purpose of securing the required amount of trees to fill the grounds intended for planting.

Proceeding eastward along the line of the Central Pacific Railroad, after leaving Rocklin, the promising town of Loomis is reached. Here may be seen many fine, thrifty trees, most of which have been planted since the first Central California Citrus Fair, held in January, 1886. Noticeably prominent among the planters being J. J. Morrison and Andrew Rider, both of whom have planted extensively in deciduous fruits; also, Mr. Rider has several hundred orange trees.

Penryn is next reached, and it is here that the home-seeker will begin to find a more extended acreage in oranges and other fruits. Among the prominent growers being Rev. N. R. Peck, Henry Swesey, Wm. Barter, P. W. Butler, Peter Norburg, and H. E. Parker. It is out of the question to mention those who have only a few trees, or who have planted for ornamentation only. The bearing grove of Peter Norburg, along the west side of the railroad, is at the present time a beautiful sight.

About midway between Penryn and Newcastle are the beautiful and valuable tracts owned by F. M. Millikan, Willard Hazen, and W. R. Strong & Co., of Sacramento. These are very valuable, as well as pretty and sightly locations. The latter named firm have planted upon their two places in this neighborhood, twenty-five hundred orange trees, which they intend to increase during the present planting season to double the present number. They have also a number of lemon trees, to which they will add this season five hundred more.

The next place claiming our attention is the Newcastle fruit district, which includes the country tributary to Newcastle. We have now reached the particular place which has done so much to advertise the resources of Northern and Central California, the place that has secured for Placer County such valuable premiums at all the Fairs where Placer County exhibits have been made, and the place where the individual exhibitors have secured the greater part of all the premiums awarded on citrus and deciduous fruits. In this district, which is located in the "warm gold belt," can be raised everything that can be produced in temperate and semi-tropical regions. To a stranger in California, it may appear singular to state that upon the same acre of land in this district may be produced, in the highest degree of development, oranges, olives, lemons, figs, pomegranates, peaches, pears, plums, prunes, grapes, apples, apricots, nectarines, persimmons, blackberries, raspberries, strawberries, gooseberries, currants, watermelons, cantaloupes, cherries, quinces, almonds, walnuts, chestnuts, barley, wheat, corn, oats, rye, and all kinds of vegetables and grasses. The fact is easily susceptible of proof, and the visitor can, beyond all manner of doubt, be satisfied on this point. From this district there has been shipped, during the present season (1887), about eight million pounds of fruits to eastern points. Among the prominent fruit growers engaged in orange growing the few names following are given: W. T. Somers, C. T. Adams, T. F. Perry, E. Goodrich, Geo. D. Kellogg, N. S. Thompson, J. C. Boggs, Avery & Berry, Robert Hector, Walker Bros., F. J. Lewis, Geo. W. Bonds, J. H. Lewis, Capt. A. Moger, A. Freitas, Dr. J. M. Frey, W. J. Wilson, C. M. Silva & Son, and J. W. Smyth.

Some of Captain Moger's trees are quite large and very prolific bearers, as are all the Newcastle orange trees.

A. Freitas, who secured the first premium on his exhibit at the last Citrus Fair, gathered in 1885 from his young grove eighteen thousand (18,000) oranges. From the same trees in 1886 he gathered thirty thousand (30,000), a very good increase for one year. The lowest price for which he sold any of his crop of 1886 was at $2\frac{1}{4}$ cents per orange. The size and value of his grove is steadily increasing.

Dr. J. M. Frey, one of the pioneer orchardists of Newcastle, has a large and rare collection of the finest oranges upon the Pacific Coast.

W. J. Wilson, one of Newcastle's leading fruit shipping merchants, has a large number of the leading varieties of orange trees. He has some of the oldest, largest, and best producing trees in Central California upon his place, some of which, growing about and shading his residence, he keeps constantly insured against loss by fire at a good figure. In case of his residence being burned down, some of his large trees would be destroyed, hence the precaution.

C. M. Silva & Son no doubt have as large and fine a collection of orange trees as can be found in Northern and Central California. Their trees are thrifty and productive. Their varieties embrace the Konah, Acapulco, Wolfskill, Washington Navel, Australian Navel, Mediterranean Sweet, Wilson's Best, St. Michael, Malta Blood, Mandarin, Emperor Mandarin, San Gabriel, Mission, Queen, Seedling, Florida Sweet, Florida Gem, Sacramento Seedling, Bitter, Du Roi, and Bergamot.

The young grove of the Auburn Orange Growers' Association, four miles southeast of Newcastle and six miles from Auburn, bids fair to become one of the most valuable pieces of property in this part of the State. This association selected and began setting out trees just after the close of the first Citrus Fair, in January, 1886, being encouraged thereto by Placer's splendid showing at that time. They first set out five hundred trees, out of which there was a loss of only fourteen. This average could hardly be equaled by planting the same number of any supposed better growing kind of trees or vines. So well did the trees thrive, so satisfactory the results, and so encouraging the prospect, that the association have twice, since starting, made additional purchases of land, now owning about ninety acres. During the spring of 1887 they planted thirteen hundred more trees, and it is reported that they will increase their grove this year by setting out upwards of two thousand more. Up to the beginning of the present year (1887), unimproved land could be purchased in the neighborhood of this grove at \$25 per acre, but at one jump the price seemed to be advanced by all holders to \$50 per acre. Within a few weeks land in this vicinity has been sold at \$75 per acre, and one transaction on sixty acres within a few days has been reported at \$100 per acre.

PLANTING TREES.

It may be proper in this connection to mention a few of those who will this year set out orange trees. W. J. Wilson will increase his grove, as will also Geo. D. Kellogg, C. M. Silva & Son, Charles Gross, F. J. Lewis, and in fact nearly every fruit producer in the district, prominent among whom are the following: F. L. Matthews expects to set out two thousand (2,000) trees. H. S. Kirk will plant twelve hundred (1,200) trees. John C. Boggs intends planting five hundred (500) trees, and many others, whom want of space will not permit to mention, will join in swelling the grand total.

The town of Ophir, about one and one half miles north of Newcastle, also claims some attention. There is hardly a dooryard in this place but what has some fine trees, while upon the farms of Benjamin Hawkins, J. F. Curtis, M. Bauman, and others, will be found many handsome specimens.

The town of Auburn, four miles east of Newcastle, next claims recognition at our hands. Here, as at other places throughout the county, orange trees were first planted for beautifying the garden or lawn, and upon the grounds surrounding many of the residences of the town, may be seen the trees in bearing. No extensive planting in this line has as yet been en-

gaged in around the town, but it is hoped that Auburn, which is the county seat of Placer, will make an effort to reach prominence in this respect.

The people of the towns east of Auburn, along the Central Pacific Railroad, have only within the past few years turned their attention to the pursuit of fruit raising, but satisfactory progress seems to mark their endeavor, and their future efforts in producing oranges are deserving of success.

OLIVE CULTURE.

Aside from the culture of deciduous and citrus fruits, olive growing is very successful, and a competent authority, Mr. Robert Williamson, states that it appears to do better in this county than in any other place in California. Thousands of trees will be planted during the present season, and the success of those who have already made the venture assures those who are now starting. It appears proper to here state that Dr. J. M. Frey, of Newcastle, was awarded a premium on his olive oil at the last Citrus Fair.

At Gold Hill, about three miles west of Newcastle, William Shillingsburg has planted thirty-five acres to olives, and says he will not stop until he has gradually set out one hundred and sixty acres. Many more names can be given of those who are doing well in this line, but space forbids.

RAISINS.

Another item worthy of notice is the fact that the first carload of raisins ever shipped from California to the East was sent by Mr. J. Parker Whitney, from Rocklin, Placer County, thirteen years ago.

The raisin product of the Mt. Pleasant district, west of Newcastle, has of late been attracting widespread attention—noticeably the pack of William Foster, whose fine raisins have been pronounced superior to the best imported Dahesa Clusters that reach our markets from this most noted foreign grape district. They have, within the past two years, in every instance wherever shown, secured the first premium for excellence.

APPLES AND PEARS.

The finest apples and pears shown in Placer's exhibit were from Colfax, at an altitude of two thousand four hundred feet, up to Towles and the surrounding section, at an altitude of three thousand six hundred feet. They were the cleanest and brightest of all, showing that this section is well adapted to their culture.

There has been, in the vicinity of Colfax, within the past few months, considerable land sold to eastern parties, and in the coming spring large accessions, amounting to hundreds of families, will be added to the population. The mean temperature of this place for the last year has been only a fraction of a degree less than at Riverside, San Bernardino County, California.

MAKE PLACER YOUR HOME.

To those who are coming to Placer County the suggestion is here made to lose no time. The wise are those who will come at once without any delay, and grasp the golden opportunities which are here presented to all. Land is now cheap, and although there are many places not offered in the market, yet it is possible for the man of limited means to secure a home that will prove to his family a heritage as lasting as the eternal hills. The country is waiting and standing with open arms and words of wel-

come to greet you. The flower-decked vales, and the sunlit slopes, and the earth, and the skies, from which the people seem to have partaken their generous, hospitable, California natures, invite you. Come! Come in your youth: in the full possession of manly vigor and pride. Come in middle age, so that you may prepare for your journey adown the pathway of life. Come in your mature years, that you may live in comfort and happiness among your contented children, weave the garlands of peace, and among the roses and lilies lay you down to your last rest.

WHEAT, BARLEY, FLOUR, ETC.

WHEAT AND FLOUR.

The chronicler of the wheat market of the year 1887, is compelled to devote his attention principally to the manipulation that, during the greater part of the period named, was the sole factor in establishing values for the San Francisco market and the State at large.

For the first seven months of the year, stocks of grain, crop prospects, the law of supply and demand, and all circumstances that, in the natural course of trade, affect values, were ignored, and all eyes were turned to, and quotations based upon the operations of a few speculators, whose downfall in the month of August, brought disaster to the grain trade, and financial annihilation to the speculators themselves. A table showing the monthly range of prices for spot wheat is appended, but only during the last three months of the year can these quotations be said to be based upon the actual value of the grain for milling purposes and for export to our usual markets. The wildest speculation was rampant, advantage being taken of the option market to force prices upward, until the third of August, when the bubble burst. The price of seller 1887 wheat, which on the second of August touched \$2 17½ per cental, fell at once to \$1 35, and on the sixth of September touched \$1 22½. After that a gradual improvement set in, the last day of December seeing confidence very generally restored, with number one white wheat spot selling at \$1 37½ per cental.

Our flour interests were disarranged in a startling degree, as can be seen by reference to the table of exports. Only since the middle of September have our mills been able to run at their normal rate and turn out their accustomed quota of flour.

The crop of wheat of 1887 can be estimated at twenty-six million five hundred thousand bushels, an outturn considerably below the average, and occasioned by a deficient rainfall and greatly reduced acreage.

BARLEY.

The course of the barley market during the year 1887 covered a wide range, and fluctuations were frequent and sharp. The year opened with high prices, which were fairly well sustained for seven months, during which period it was generally estimated that the crop of the State would be less than it was in 1886. The result has demonstrated all early estimates to be entirely at fault, the actual outturn of the crop of 1887 being nearly 10 per cent more than that of the previous year. Prices broke towards the end of July, about which time barley began to come forward freely, and while the receipts from July to December, both inclusive, were not quite as large as during the corresponding period in 1886, stocks in San Francisco warehouses rapidly accumulated, owing to no outlet being found, as was the case in the previous year.

The fact that there was a considerable increase in the acreage in most of the so called barley sections of the State, was forgotten. This, coupled with very favorable weather immediately preceding harvest time, accounts for the actual outturn so greatly exceeding early estimates.

**SAN FRANCISCO PRODUCE EXCHANGE—STATEMENT RECEIPTS OF DOMESTIC
PRODUCE AT SAN FRANCISCO, DURING YEAR 1887, FROM ALL SOURCES.**

MONTHS.	Flour— Quarter Sacks.	Wheat— Centals.	Barley— Centals.	Oats— Centals.	Corn— Centals.	Rye— Centals.
January.....	384,728	1,061,882	69,494	49,197	26,500	3,582
February.....	327,839	398,069	49,777	44,665	26,550	3,832
March.....	374,757	675,174	83,703	11,396	6,325	2,245
April.....	232,040	673,664	68,711	63,430	51,493	1,790
May.....	179,567	563,408	140,359	12,690	20,379	3,350
June.....	182,558	1,082,479	90,318	3,568	21,557	4,765
July.....	170,354	1,283,055	207,623	21,699	18,700	600
August.....	248,656	1,397,573	377,148	33,280	30,183	2,485
September.....	295,267	734,716	383,308	46,611	11,863	4,164
October.....	430,007	365,004	269,990	45,404	17,134	2,874
November.....	427,683	613,315	172,149	45,841	29,170	932
December.....	346,889	754,292	142,786	37,031	21,746	1,658
Totals, 1887.....	3,600,345	9,602,631	2,055,366	414,812	281,600	32,277
Totals, 1886.....	4,885,772	16,527,503	2,184,560	508,717	218,100	26,275
Totals, 1885.....	5,340,092	13,053,685	1,244,811	717,013	157,309	62,335

MONTHS.	Beans— Sacks.	Potatoes— Sacks.	Hay—Tons.	Flaxseed— Sacks.	Mustard Seed— Sacks.	Wool— Bales.
January.....	33,043	70,744	4,562	4,085	892	82
February.....	8,103	43,179	5,711	566	17	115
March.....	21,278	50,978	10,737	386	1,044	2,368
April.....	5,152	13,390	7,931	124	392	12,138
May.....	13,439	50,574	7,464	33	741	20,652
June.....	16,443	89,716	11,147	2,510	-----	26,441
July.....	3,803	93,969	12,749	456	105	13,110
August.....	10,008	83,117	15,157	950	2,504	5,092
September.....	39,826	97,199	14,722	1,915	11,458	8,731
October.....	117,046	106,302	10,639	10,155	12,828	12,006
November.....	119,739	133,668	9,540	21,675	5,689	8,583
December.....	35,650	128,364	7,001	15,338	2,064	1,451
Totals, 1887.....	423,530	961,200	117,360	58,193	37,734	110,769
Totals, 1886.....	361,320	1,079,593	99,442	88,704	43,828	114,098
Totals, 1885.....	367,233	1,192,461	79,590	81,444	11,956	118,237

Report of flour and grain remaining in California on January 1, 1888:

	Flour— Barrels.	Wheat— Centals.	Barley— Centals.	Oats— Centals.	Beans— Sacks.	Corn— Centals.	Rye— Cent'ls.
San Francisco and Oakland Wharf, including wheat afloat in harbor.....	16,866	971,940	776,240	26,280	66,285	15,840	950
Marin, Sonoma, Lake, Mendo- cino, and Humboldt Counties.....	4,115	112,400	74,500	24,000	250	4,000	-----
Napa, Solano, Yolo, and Colusa Counties.....	11,098	2,225,170	412,150	100	150	2,200	-----
Sacramento, Yuba, Sutter, Butte, Tehama, Placer, and Amador Counties.....	13,580	1,206,700	351,100	1,000	440	11,000	-----
Contra Costa and Alameda Co's.....	400	2,678,950	604,200	2,750	300	-----	-----
San Joaquin, Stanislaus, Mer- ced, Fresno, Tulare, and Kern Counties.....	7,200	2,159,400	324,500	2,350	-----	11,560	3,400
San Mateo, Santa Clara, San Be- nito, Santa Cruz, and Monte- rey Counties.....	1,250	223,800	1,058,300	7,750	3,400	700	-----
San Luis Obispo, Santa Barbara, Ventura, Los Angeles, San Ber- nardino, and San Diego Co's.....	5,470	151,700	922,000	1,150	39,100	76,000	-----
Totals.....	59,979	9,730,060	4,522,990	65,380	109,925	121,300	4,350

Comparative statement:

	Flour— Barrels.	Wheat— Centals.	Barley— Centals.	Oats— Centals.	Beans— Sacks.	Corn— Centals.	Rye— Centals.
July 1, 1887	50,275	2,790,400	798,500	42,400	74,405	72,330	1,350
January 1, 1887	89,605	7,812,850	2,590,250	47,400	243,550	136,650	44,650
July 1, 1886	102,325	1,252,600	114,850	31,150	103,700	27,625	1,080
October 10, 1885	107,180	13,768,539	1,620,500				
July 1, 1885	70,800	5,382,900	608,150	107,440	81,280	72,100	32,875
January 1, 1885	187,830	15,852,210	1,933,250	304,710	168,110	146,430	61,300
July 1, 1884	112,600	664,050	640,350	58,450	44,175	16,110	30,100
January 1, 1884	177,280	6,735,720	2,434,150	149,330	53,050	91,220	58,910
July 1, 1883	77,000	979,500	820,500	10,300	56,060	57,420	8,125
January 1, 1883	158,893	8,381,879	1,941,466	118,650	94,830	90,865	23,665
July 1, 1882	119,324	2,822,903	162,416	21,305	48,708	61,597	3,021
January 1, 1882	123,151	15,191,020	823,322	85,143	95,843	157,716	32,059
July 1, 1881	135,592	12,444,278	595,028	15,744	70,780	94,210	3,820
January 1, 1881	78,253	19,805,466	1,651,787	95,220	113,708	228,037	17,742
July 1, 1880	30,934	323,821	908,294	18,357	52,217	88,572	5,989
January 1, 1880	83,638	4,096,895	2,013,930	112,351	48,904	129,715	38,712
July 1, 1879	37,786	593,251	806,565	26,484		148,002	22,237
January 1, 1879	75,130	5,781,168	2,207,142	137,042		233,534	64,384
July 1, 1878	20,231	284,424	147,598	29,564		11,066	280
January 1, 1878	57,187	2,646,811	882,046	104,998		110,434	3,901

Exports from the State of California by rail for the year 1887:

MONTHS.	Barley— Centals.	Beans— Pounds.
January		2,034,290
February	9,928	1,411,460
March		1,973,400
April		424,520
May		518,200
June		717,720
July		314,740
August	4,104	1,851,000
September	18,683	2,742,130
October	5,214	4,409,040
November	29,260	4,486,390
December	11,269	1,158,140
Totals	78,458	22,041,030
Total, 1886	245,694	

Export of flour and grain during year 1887—from San Francisco, by sea:

MONTHS.	Flour— Barrels.	Wheat— Centals.	Barley— Centals.	Beans— Sacks.
January	72,446	1,302,743	1,830	6,143
February	83,860	375,528	9,160	3,153
March	79,673	496,630	4,588	3,607
April	80,151	570,776	13,211	3,678
May	35,009	442,418	6,454	6,332
June	39,079	968,068	30,681	2,486
July	35,194	938,279	12,253	3,323
August	33,378	1,698,539	69,902	10,305
September	67,355	806,186	35,946	9,221
October	105,006	142,672	48,404	64,500
November	79,853	*410,899	113,480	39,300
December	77,176	987,951	70,629	28,400
Totals	788,180	9,140,689	416,538	180,448
Totals, 1886	1,104,395	15,874,268	760,606	

* Including 26,633 loaded at San Pedro.

Stocks of grain in "regular" warehouses, San Francisco, Port Costa, and South Vallejo, in tons:

MONTHS.	Wheat.	Barley.	Oats.	Corn.
January 1, 1887.....	87,438	21,275	1,830	1,494
February 1, 1887.....	72,000	19,150	1,794	1,362
March 1, 1887.....	77,133	18,474	2,848	1,863
April 1, 1887.....	91,423	16,816	1,751	2,868
May 1, 1887.....	157,548	15,100	1,759	1,804
June 1, 1887.....	153,765	15,664	1,588	1,173
July 1, 1887.....	112,533	13,915	1,403	885
August 1, 1887.....	131,939	17,863	874	415
September 1, 1887.....	232,321	27,761	701	788
October 1, 1887.....	242,008	38,618	855	274
November 1, 1887.....	233,867			
December 1, 1887.....	193,016	39,551	1,468	543
January 1, 1888.....	172,083			

RAINFALL AND WHEAT.

The following table shows the rainfall at San Francisco for a series of years, and the crop of wheat raised:

SEASON.	Rainfall—Inches.	Crop.	Centals.
1877-78.....	31.12	1878	22,825,000
1878-79.....	24.56	1879	19,801,000
1879-80.....	26.38	1880	34,150,000
1880-81.....	29.86	1881	20,600,000
1881-82.....	16.14	1882	21,000,000
1882-83.....	20.12	1883	20,100,000
1883-84.....	32.28	1884	28,830,000
1884-85.....	18.10	1885	15,177,980
1885-86.....	33.05	1886	21,394,280
1886-87.....	19.04	1887	*16,000,000

* Estimated.

STATISTICS CROP YEAR 1886-87.

	Wheat—Tons.
Exports flour, 999,918 barrels, equals.....	149,988
Exports wheat.....	616,496
Total exports.....	766,484
Local consumption.....	300,000
Stock carried over first of July, 1887.....	147,062
Total.....	1,213,546
Deduct.....	Wheat—Tons.
Flour from Oregon, 262,104 quarter sacks.....	9,829
Wheat from Oregon.....	50,020
Imports by rail (estimated).....	6,000
Total imports.....	65,849
Stock carried over first of July, 1886.....	77,978
	143,827
Crop of 1886.....	1,069,719

CALIFORNIA WHEAT CROP 1886.

YIELD BY COUNTIES, IN TONS.	
Sonoma.....	5,000
Solano and Napa.....	45,000
Yolo.....	50,000
Sacramento.....	10,000

Sutter	30,000	
Placer and Amador	8,000	
Yuba	10,000	
Colusa	145,000	
Butte	40,000	
Tehama	35,000	
		378,000
San Joaquin	65,000	
Stanislaus	122,000	
Merced	40,000	
Fresno	90,000	
Tulare and Kern	130,000	
		447,000
Contra Costa	35,000	
Alameda	25,000	
		60,000
San Mateo and Santa Clara	25,000	
San Benito	15,000	
Santa Cruz	6,000	
Monterey	35,000	
		81,000
San Luis Obispo	20,000	
Ventura	10,000	
Santa Barbara	10,000	
Los Angeles	45,000	
San Diego	6,000	
		91,000
Various		13,000
Total		1,070,000

ARRIVALS OF NEW WHEAT.

Date of arrival of new wheat at tide water each year since that cereal was first produced in quantity, and the price obtained for the same:

Year.	Month.	Price.
1859	July 14	\$1 90 @ \$2 00
1860	July 3	1 50 @ 1 55
1861	July 24	1 50 @ 1 62
1862	July 11	1 62 @ 1 65
1863	July 25	1 50 @ 1 60
1864	July 9	2 80 @ 2 95
1865	June 12	2 20 @ 2 25
1866	June 25	1 50 @ 1 60
1867	June 17	1 65 @ 1 70
1868	June 18	1 90 @ 2 00
1869	June 15	1 40 @ 1 45
1870	June 9	1 70 @ 1 80
1871	June 23	2 30 @ 2 37
1872	June 10	1 80 @ 1 85
1873	June 7 (at Vallejo)	1 75 @ 1 80
1874	June 11	1 65 @ 1 67
1875	June 2 (at Vallejo)	1 65 @ 1 67
1876	June 9 (at Oakland)	1 75 @
1877	June 2 (at Vallejo)	2 40 @
1878	June 13	1 70 @
1879	June 20	1 65 @
1880	June 24	1 00 @
1881	June 7	1 25 @ 1 40
1882	June 6	1 67 @
1883	June 19	1 65 @
1884	June 30	1 45 @ 1 45
1885	June 3	1 42½ @
1886	June 5	1 25 @
1887	June 11	1 86 @

ARRIVALS OF NEW BARLEY.

Arrivals of new barley for a series of years past and the price obtained for the same:

Year.	Month.	Price.
1870	June 19	\$1 20
1871	June 12	1 57 $\frac{1}{2}$
1872	June 6	1 40
1873	June 5	1 10
1874	June 9	1 45
1875	June 20	1 35
1876	May 30	90
1877	June 30	1 55
1878	June 11	80
1879	June 30	75
1880	June 24	68 $\frac{3}{4}$
1881	June 21	90
1882	June 12	1 65
1883	June 25	95
1884	July 9	90
1885	June 16	1 25
1886	May 27	1 10
1887	June 4	1 15

Highest, lowest, and average prices of wheat and barley for the year 1887. Quotations based on actual sales in the sample market:

MONTHS.	WHEAT.			BARLEY.		
	Average.	Highest.	Lowest.	Average.	Highest.	Lowest.
January	\$1 57 $\frac{3}{4}$	\$1 65	\$1 52 $\frac{1}{2}$	\$1 12	\$1 20	\$1 02 $\frac{1}{2}$
February	1 50 $\frac{3}{4}$	1 65	1 42 $\frac{1}{2}$	1 05 $\frac{3}{4}$	1 17 $\frac{1}{2}$	92 $\frac{1}{2}$
March	1 58 $\frac{1}{2}$	1 70	1 48 $\frac{3}{4}$	1 01 $\frac{1}{2}$	1 07 $\frac{1}{2}$	95
April	1 70 $\frac{1}{2}$	1 76 $\frac{1}{4}$	1 67 $\frac{1}{2}$	1 08 $\frac{1}{2}$	1 15	1 05
May	1 75	1 80	1 72 $\frac{1}{2}$	1 11 $\frac{1}{2}$	1 20	1 02 $\frac{1}{2}$
June	1 80 $\frac{1}{2}$	1 87 $\frac{1}{2}$	1 75	1 07	1 10	1 02 $\frac{1}{2}$
July	1 80 $\frac{1}{2}$	1 92 $\frac{1}{2}$	1 77 $\frac{1}{2}$	1 04	1 10	98 $\frac{3}{4}$
August	1 85 $\frac{1}{2}$	2 00	1 30	94 $\frac{3}{4}$	1 01 $\frac{1}{2}$	90
September	1 25 $\frac{1}{2}$	1 30	1 22 $\frac{1}{2}$	91 $\frac{1}{4}$	97 $\frac{1}{2}$	85
October	1 25 $\frac{1}{2}$	1 30	1 22 $\frac{1}{2}$	83 $\frac{3}{4}$	90	80
November	1 31 $\frac{1}{4}$	1 40	1 25	85 $\frac{1}{2}$	90	82 $\frac{1}{2}$
December	1 36 $\frac{3}{4}$	1 41 $\frac{1}{4}$	1 32 $\frac{1}{2}$	86 $\frac{3}{4}$	90	82 $\frac{1}{2}$

ANNUAL METEOROLOGICAL REVIEW

OF THE

STATE OF CALIFORNIA DURING THE YEAR 1887,

BY THE

Meteorological Department of the State Agricultural Society.

Collated and compiled by SERGEANT JAMES A. BARWICK, Observer Signal Corps, U. S. A.,
and Meteorologist to the State Board of Agriculture.

SACRAMENTO, March 1, 1888.

EDWIN F. SMITH, *Secretary State Agricultural Society*:

SIR: I have the honor to submit the following annual meteorological review and brief notes on the resources of California, for the year 1887. The meteorological portion will be found to be quite complete and extensive in its records, and covering periods of from one to thirty-nine years. The brief notes on the resources of every county in the State, will be valuable because reaching a desirable class of people through this report. I have endeavored to keep out as much as possible the flowery descriptions of every little hamlet, and to give a general idea of the resources of each county represented.

Through the courtesy of Mr. Ellwood Cooper, of Santa Barbara, I am enabled to give his pamphlet entire, on the culture of the olive. As this particular tree will soon be planted extensively in our foothills and valleys, the present report will be valuable in that respect. There is so much instructive data contained in this report, that it would be useless to mention each particular article.

It is to be hoped that our next Legislature will give us a State Weather Service, and in so doing, enable this State to furnish accurate statistical evidences of the climate, as well as the resources of one of the most prosperous and rapidly advancing States in the Union.

Very respectfully, your obedient servant,

SERGEANT JAMES A. BARWICK,
Observer Signal Corps, etc.

RESOURCES AND CLIMATE OF THE SACRAMENTO VALLEY COUNTIES.

The following reports show the general meteorological features, resources, etc., of the counties in the Sacramento Valley, composed of Sacramento, Solano, Yolo, Sutter, Yuba, Colusa, Butte, Tehama, and Shasta.

CLIMATE OF CALIFORNIA, BRIEFLY DESCRIBED.

There are essentially two climates in California. The land climate and the sea climate. The latter derives its low temperature from the ocean, the water of which, along the coast, stands at from 52 to 54 degrees all the year round. The evenness of the ocean temperature is owing to a steady current from the north, which is accompanied also by winds in the same direction during the entire summer season, or rather from April to October inclusive.

Almost daily, during this period, a deluge of cold, damp air, of the same temperature as the ocean over which it has passed, is poured upon the land. It is mostly laden with mists in dense clouds, which it deposits at the foothills and on the slopes of the highlands, or carries a short distance into the interior, wherever there is a break in the land wall.

The land climate is as nearly as possible the opposite in every respect. In summer and autumn it is hot and dry. It undergoes various modifications from the configuration of the surface of the earth. Even the mountains, which retain the snow to a late period, present a high temperature in the middle of the day, and the presence of snow on their summits in June, is owing to the great mass which has accumulated on them, rather than to cold weather. A large district of territory lies between the jurisdiction of the two climates and subject to their joint influence. It is composed chiefly of valleys surrounding the bay of San Francisco and penetrating into the interior in every direction. There is no climate in the world more delightful than these valleys enjoy, and no territory more productive. Whilst the ocean prevents the contiguous land from being scorched in summer, it also prevents it being frozen in winter. Hence ice and snow are not common in the ocean climate.

The difference in temperature is comparatively slight between summer and winter. The absence of warm weather in the summer months is characteristic of the coast climate, and strikes a stranger forcibly. The most ordinary programme of this climate for the year is as follows, beginning with the rainy season: The first decided rains are in November or December, when the country, after having been parched with drought, puts on the garb of spring. In January the rains abate and vegetation advances slowly, with occasional slight frosts. February is spring-like, with but little rain. March and April are pleasant and showery, with an occasional hot day. In May the sea breeze begins, but does not give much annoyance. In June, just as warm weather is about to set in, the sea breeze comes daily and keeps down the temperature—it continues through July and August, occasionally holding up for a day or two, permitting the sun to heat the air to a sweating point. In September the sea wind moderates, and there is a slight taste of summer, which is prolonged into the next month. The pleasant weather often lingers in the lap of winter, and is interrupted only by the rains of November or December.

Though the nights in the interior are not so uniformly cool, yet there are few localities, even in the valleys, where they are too warm for sleeping, even though the day temperature may have reached 100 degrees. This is a remarkable feature of the climate of the Pacific States, and it has an important bearing on the health, vigor, and character of the population. In speaking of the "rainy season," strangers will not infer that the rain is perpetual, or nearly so, during that time. The term is employed only in contrast with the dry season, and it implies the possibility rather than the actual occurrence of rain. In more than half the winters there

is not a drop beyond the necessities of agriculture, and even in the seasons of most rain, much pleasant weather is interspersed. If the winter be not extraordinary, it is generally regarded as the most pleasant season of the year. In the intervals of rain, it is bright, sunny, and calm. It is spring rather than winter. The grass starts as soon as the soil is wet. At Christmas, nature wears her green uniform almost throughout the entire State, and in February and March, it is set with floral jewels. The blossoms increase in variety and profusion until April, when they are so abundant in many places as to show distinctly the yellow carpeting on hills five miles distant.

In the Atlantic States the storms of approaching winter put a stop to the labors of the farm and force both man and beast into winter quarters. In California it is just the reverse. The husbandman watches the skies with impatient hope, and as soon as the rains of November and December have softened the soil, every plow is put in requisition. Nothing short of excess or deficiency of rain interferes with winter farming. The planting season continues late, extending from November to April, giving an average of nearly six months for plowing and sowing, during which the weather is not likely to interfere with outdoor work more than in the six spring and summer months of the Eastern States. Owing to the absence of rain harvesting is conducted, which would confuse the ideas of an Atlantic farmer. There are no showers or thunder gusts to throw down the grain, or wet the hay, or impede the reaper. The hay dries in the swath without turning. The grain remains standing in the field awaiting the reaping machine, it may be, for a month after it is ready to cut—and so it remains when cut, awaiting the thrasher. When thrashed and sacked, the sacks are sometimes piled up in the fields a long time before removal. In September or October the great grain-growing valleys may often be seen dotted over with cords of grain in sacks, as secure from danger from the weather as if securely housed. Owing to the absence of severe frosts, the gardens around San Francisco supply fresh vegetables all through the winter. New potatoes often make their appearance in March. In May the potatoes are full grown, and the largest weigh a pound or more. Many of the interior valleys are subject to malarious fevers, but not generally of a severe type. The various forms of disease which prevail elsewhere are found here, but they present no peculiarities worthy of comment. Insanity and diseases of the heart and blood vessels are frequent, but this is due rather to moral and physical causes than to climatic influence. The relation of the climate to pulmonary affections presents its most important aspect. Many persons threatened with lung disease, or but slightly affected by it, have regained their health completely by immigration to this State.

TIMES OF PLANTING AND MATURITY OF STAPLE PRODUCTS.

In the valley portion of Northern California, the times of planting and sowing, and the times of maturity of the staple products, are as follows:

	Planting.	Maturing.
Wheat	December and January	June.
Barley	December and January	June and July.
Oats	January and February	June and July.
Corn	February and March	June to August.
Beans	February and March	May to July.
Peas	February and March	April to June.
Tomatoes	February and March	May to July.

The time of maturity of fruit is as follows :

	Bloom.	Mature.
Apricots	March	May to July.
Peaches	March	May to July.
Pears	April	June to October.
Apples	April	June to November.
Oranges	April	November to December.
Grapes .....	.....	June to December.
Cherries	March and April	May to July.
Almonds	January to March	October.
Plums	March	June to July.

THE SACRAMENTO VALLEY.

It would be impossible in this brief space to give an exhaustive description of our great valley, or even to fully outline the characteristics which long since placed this part of California on a footing with the most favorable localities of the continent. Aside from its geographical peculiarities, which are fast giving us an enviable reputation at home and abroad, this section is rich in historical reminiscences.

These date from the earliest pioneer times—the days of the unfortunate Donner party, and of the generous Captain John A. Sutter—the days when placer mining was the chief industry, and the whims of the people the law, to the present, when we find in the “great valley” the industries of refined culture, and a development resting upon sobriety, energy, and intelligence. In fact, the history of Northern California is pregnant with all the variety of items which go to show the steady advancement necessary to a sure, sturdy, and independent growth of one of the most interesting sections of our great commonwealth. But these must be passed, at least for the present.

The valley proper is one of the largest of its class in the world, and extends from Shasta County on the north to San Joaquin on the south, and is limited on the east and west only by the lofty mountain ranges, whose snow-capped peaks point skyward: fit emblems of their supremacy. To the northward, and plainly visible for one hundred miles, Mount Shasta rises heavenward nearly fifteen thousand feet, and is second in altitude in the United States.

The Sacramento River, the largest stream in the State, traverses the valley from north to south, and is the natural line of commerce. Tributaries from the Sierra Nevada and Coast Range flow into the Sacramento on either side, and are, in some instances, themselves navigable. The Sacramento rises in the extreme north, and flows southward to Suisun Bay, from which, by San Pablo and San Francisco Bays, it has communication with the Pacific Ocean. A feature particularly noticeable from the geographer's standpoint, and not without interest to the intelligent home-seeker, is the fact that the streams of the valley, after reaching the plains, follow the higher sections, thereby furnishing unequalled facilities for irrigation. The artificial watering of crops has not heretofore been considered necessary, but is deemed of value in a few special instances.

The valley for a quarter of a century has been devoted to agriculture, and until recently almost exclusively to grain raising. From the first it was found that wheat growing was remunerative employment, and with that, content with good enough, which was so common a characteristic of the pioneer immigrant, no loftier ambition was stimulated. And, not-

withstanding the discouraging depression of the grain markets in previous years, there never has been a time when the thrifty farmer could not meet his liabilities, and point to a little surplus he could call his own. Of late years, however, considerable attention has been devoted to fruit raising, and now large shipments are daily made, through the fruit season, to San Francisco and eastern markets. The fruit produced is of excellent quality, both as regards appearance and flavor, which fact is abundantly attested by the awards in its favor lately made, when brought into competition with similar products from other sections. As immigrants from the East and Europe arrive, a large proportion at once enter into horticultural pursuits, and are amply rewarded. Lately much attention has been devoted to the citrus fruits, and already our oranges and lemons rank favorably with the products of the older countries.

Although the Sacramento Valley has long been settled, and for the most part made subject to continual tillage, there is yet room for development; and as fruit interests gain in strength, and small farming is consequently encouraged, there will be room for thousands where now are hundreds, and the wealth of the country will be correspondingly increased. In this connection it may be interesting to know what lands are subject to cultivation. A good authority gives the following estimate: Plain land, 4,000,000 acres; foothills proper, 4,500,000 acres; upper foothills, 4,000,000 acres; mountains, between 1,000 and 2,000 feet elevation, 6,000,000 acres, making the total acreage of the land described 18,500,000 acres.

A few of the cities and larger towns may be mentioned briefly. On the direct route of commercial traffic is Sacramento, a large and flourishing city, the capital of the State, and the seat of numerous institutions of the arts, sciences, and learning; Marysville, the center of vast agricultural districts, which has direct commercial connection with the outside world by water and by rail, as well as the home of several noted factories and institutions of learning; Chico, now one of the most prosperous little cities in the State, and the location of the new Normal School; Oroville, with its colonies and orange groves, and others of which we cannot even speak.

The best evidences, however, of the possibility of the Sacramento Valley, are shown by the interest manifested by those who visit us, and have already cast their lot with ours.

GENERAL WEATHER REVIEW OF SACRAMENTO.

This city is geographically situated in latitude north $38^{\circ} 35'$; longitude west from Greenwich, $121^{\circ} 30'$; elevation above sea level, 35 feet; elevation of the zero point of the barometer cistern above sea level, 64 feet.

The following tabulated data show the general meteorological features of the weather of this city for the months of January and February, from 1878 to 1888, inclusive. For March, April, May, and June, from 1878 to 1887, inclusive, and for July, August, September, October, November, and December, from 1877 to 1887, inclusive. A review by seasons, winter, spring, summer, and autumn. Also, an annual review of the weather from 1878 to 1887.

JANUARY WEATHER IN SACRAMENTO, FROM 1878 TO 1888.

This table shows the mean average barometer, the highest, lowest, and range of barometer; the average temperature, highest, lowest, and monthly range of temperature; the greatest and least daily range of temperature; the average maximum, minimum, and range of temperature; average relative humidity and dew point; prevailing direction of wind, total rainfall, monthly velocity of wind, maximum velocity of wind, and prevailing direction at time of maximum velocity; clear, fair, cloudy, and foggy days; number of days rain fell; thunder and lightning storms; solar and lunar halos; light and killing frosts; days snow fell; number of days the temperature was below 32°; and the highest, lowest, and range of water in the river during the month:

JANUARY :	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Average barometer.....	30.05	30.15	30.16	30.15	30.14	30.27	30.16	30.18	30.09	30.16	30.13
Highest barometer.....	30.33	30.58	30.44	30.46	30.42	30.61	30.58	30.43	30.40	30.51	30.63
Lowest barometer.....	29.46	29.85	29.74	29.80	29.75	29.88	29.60	29.87	29.32	29.69	29.51
Monthly range of barometer.....	0.87	0.73	0.70	0.66	0.67	0.73	0.98	0.56	1.08	0.82	1.12
Average temperature.....	49.7	45.5	43.5	49.2	45.2	42.0	46.6	47.2	45.7	48.5	42.8
Highest temperature.....	62.0	63.0	61.0	64.0	62.0	62.2	61.0	62.0	62.2	65.2	63.0
Lowest temperature.....	27.0	29.3	25.0	35.0	29.0	22.0	31.0	34.2	27.5	30.0	19.0
Monthly range of temperature.....	35.0	33.7	36.0	29.0	33.0	40.2	30.0	27.8	34.7	35.2	44.0
Greatest daily range of temperature.....	22.0	25.2	22.0	21.0	22.1	23.6	29.0	19.0	21.5	28.8	24.0
Least daily range of temperature.....	6.0	9.6	6.0	4.0	5.8	5.9	8.5	5.0	3.5	6.3	6.0
Average maximum temperature.....	53.4	53.7	50.7	55.0	53.3	49.5	55.9	52.7	52.0	57.7	49.9
Average minimum temperature.....	41.9	35.8	35.2	43.0	38.2	34.0	37.9	42.0	40.4	39.3	35.7
Mean daily range of temperature.....	13.5	17.9	15.5	12.0	15.1	15.6	18.0	10.7	11.6	18.4	14.2
Average humidity.....	79.0	72.0	78.9	82.3	69.7	82.7	80.8	88.2	89.6	73.3	80.2
Average dew point.....					34.7	36.6	40.7	43.7	42.6	39.6	36.8
Prevailing wind.....	S.E.	N.	S.E.	S.E.	N.	S.E.	S.E.	S.E.	S.E.	N.W.	N. & S.E.
Total precipitation.....	9.26	3.18	1.64	6.14	1.89	2.23	3.43	2.16	7.95	1.12	4.81
Total velocity of wind.....	4,906	4,742	4,365	5,548	5,718	3,770	4,279	3,738	5,366	4,404	4,380
Maximum velocity of wind.....	28	33	34	32	32	36	30	18	44	26	36
Direction at time of maximum velocity.....	S.E.	N.	S.E.	S.E.	N.	N.W.	S.E.	S.E.	S.E.	N.W.	N.
Clear days.....	8	11	18	10	17	17	13	9	14	21	8
Fair days.....	9	15	5	10	9	11	10	12	11	7	12
Cloudy days.....	14	5	8	11	5	3	8	10	6	3	11
Days rain fell.....	17	10	7	11	8	4	8	8	13	6	18
Foggy days.....	0	0	2	3	0	3	0	0	4	0	0
Thunder and lightning storms.....	0	0	0	0	0	0	0	0	1	0	0
Solar halos.....	0	0	1	1	1	0	3	0	0	0	0
Lunar halos.....	0	0	3	1	1	0	2	0	0	0	0
Light frosts.....	3	5	4	9	10	3	1	6	3	3	0
Killing frosts.....	6	11	10	0	7	13	9	0	6	7	11
Days snow fell.....	0	1	1	0	0	0	0	0	0	0	3
Days minimum temperature below 32°.....	5	7	8	0	2	11	2	0	4	3	12
Highest river.....	21.9	17.5	16.9	26.0	17.0	12.2	10.9	23.5	25.6	13.2	17.6
Lowest river.....	7.3	5.6	13.1	16.0	11.6	8.1	7.8	17.0	17.1	9.0	8.5
Monthly range of river.....	14.6	11.9	3.8	10.0	5.4	4.1	3.1	6.5	8.5	4.2	9.1

FEBRUARY WEATHER IN SACRAMENTO, FROM 1878 TO 1888.

This table gives the mean average barometer, temperature, relative humidity, and dew point; the highest and lowest barometer and temperature, with the monthly range of each; the greatest and least daily range of temperature; the average maximum, minimum, and range of temperature; prevailing wind; total rainfall; total and maximum velocity of wind, and the direction at time of maximum velocity; clear, fair, cloudy, and foggy days, and total number of days rain fell; solar and lunar halos; light and killing frosts; days snow fell, and number of days the minimum temperature was below 32°; along with the highest, lowest, and range of water in the river during the month:

FEBRUARY:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Average barometer.....	29.96	30.10	30.19	30.11	30.17	30.14	30.04	30.14	30.08	30.02	30.08
Highest barometer.....	30.36	30.30	30.48	30.41	30.52	30.74	30.43	30.43	30.38	30.46	30.30
Lowest barometer.....	29.50	29.77	29.76	29.85	29.75	29.68	29.42	29.86	29.68	29.54	29.79
Monthly range of barometer.....	0.86	0.53	0.72	0.56	0.77	1.06	1.01	0.57	0.70	0.92	0.51
Average temperature.....	51.3	55.0	46.0	53.5	46.3	46.0	46.9	54.0	53.3	44.7	52.6
Highest temperature.....	61.0	73.5	64.0	67.0	62.8	71.7	71.0	70.0	72.7	67.0	75.0
Lowest temperature.....	40.0	33.0	30.0	40.0	30.9	22.0	21.0	39.8	38.0	30.0	34.0
Monthly range of temperature.....	21.0	40.5	34.0	27.0	31.9	49.7	50.0	30.2	34.7	37.0	41.0
Greatest daily range of temperature.....	16.0	28.5	28.0	19.0	23.3	28.0	25.6	21.5	23.0	25.2	28.5
Least daily range of temperature.....	5.0	5.5	9.0	5.0	9.0	11.0	7.0	8.0	7.0	7.2	10.0
Average maximum temperature.....	56.3	63.1	54.7	59.3	54.6	55.9	56.1	62.5	61.4	52.2	62.2
Average minimum temperature.....	45.6	45.6	36.4	47.7	38.3	35.9	38.9	46.4	47.1	37.4	43.7
Mean daily range of temperature.....	10.7	17.5	18.3	11.6	16.3	20.0	17.2	16.1	14.3	14.8	18.5
Average humidity.....	80.0	73.0	68.5	82.2	74.1	68.3	79.7	73.8	81.5	76.7	72.1
Average dew point.....	8.04	3.88	1.83	5.06	2.40	1.11	4.46	0.49	0.29	6.28	0.57
Prevailing wind.....	S.E.	N.	S.E.	S.E.	S.E.	N.	N.	N.W.	N.W.	S.	S.E.
Total precipitation.....	5.359	3.877	4.442	4.038	5.176	3.817	5.170	4.851	4.065	6.305	4.500
Total velocity of wind.....	36	33	32	22	27	23	33	31	32	33	36
Maximum velocity of wind.....	36	33	32	22	27	23	33	31	32	33	36
Direction at time of maximum velocity.....	S.E.	N.	S.E.	S.W.	N. & S.E.	N.W.	S.	N.W.	N.W.	N.W.	N.W.
Clear days.....	5	11	16	7	11	19	17	18	17	8	21
Fair days.....	8	11	4	11	11	8	5	8	11	11	7
Cloudy days.....	15	6	9	10	6	1	7	2	0	9	1
Foggy days.....	0	0	0	0	0	0	0	0	0	0	0
Days rain fell.....	17	9	10	13	10	4	10	6	3	14	5
Thunder and lightning storms.....	0	0	0	0	0	0	0	0	0	0	1
Solar halos.....	0	0	0	0	1	0	0	0	0	0	0
Lunar halos.....	0	0	0	1	0	0	0	6	0	4	2
Light frosts.....	0	3	3	2	10	3	0	0	0	6	3
Killing frosts.....	0	2	7	0	3	13	8	0	0	0	0
Days snow fell.....	0	0	0	0	2	2	0	0	0	0	0
Days minimum temperature below 32°.....	0	0	1	0	2	11	6	0	0	1	0
Highest river.....	26.0	20.0	13.6	26.6	16.2	11.7	17.6	18.0	25.0	18.6	20.0
Lowest river.....	21.9	8.0	11.3	20.5	11.0	9.4	10.1	16.1	19.8	10.3	16.2
Monthly range of river.....	4.1	12.0	2.3	6.1	5.2	2.3	7.5	1.9	5.2	8.3	3.8

MARCH WEATHER IN SACRAMENTO, FROM 1878 TO 1887.

This comparative weather table shows the average, highest, lowest, and range of barometer; the average, highest, lowest, and range of temperature; the greatest and least daily range of temperature; the average, maximum, minimum, and range of temperature; average relative humidity and dew point; the prevailing direction and total velocity of wind; maximum velocity, and direction at the time of maximum velocity; total rainfall; total number of clear, fair, cloudy, and foggy days, along with the number of days rain fell; thunder and lightning storms; solar and lunar halos; light and killing frosts; number of days the minimum temperature was below 32°; the highest, lowest, and range of water in the river during the month:

MARCH:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	30.02	30.08	30.10	30.07	30.10	30.02	29.96	30.06	30.04	30.10
Highest barometer	30.39	30.33	30.36	30.41	30.38	30.24	30.30	30.37	30.35	30.32
Lowest barometer	29.61	29.73	29.76	29.68	29.71	29.62	29.51	29.80	29.63	29.88
Range of barometer	0.78	0.60	0.60	0.73	0.67	0.62	0.79	0.57	0.72	0.44
Average temperature	56.7	57.4	48.8	55.5	53.0	56.9	52.9	59.1	52.1	57.8
Highest temperature	72.0	75.0	72.0	79.0	80.0	78.2	70.5	77.0	72.0	78.7
Lowest temperature	40.0	38.0	29.0	37.0	34.1	42.5	39.0	45.8	37.7	40.7
Monthly range of temperature	32.0	37.0	43.0	42.0	45.9	35.7	31.5	31.2	34.3	38.0
Greatest daily range of temperature	21.0	26.0	30.0	23.0	26.0	31.0	22.7	28.0	26.3	31.3
Least daily range of temperature	6.0	7.0	9.0	8.0	6.9	6.0	6.5	13.0	8.3	10.5
Average maximum temperature	63.6	64.8	59.5	64.0	62.5	69.3	60.7	70.5	60.8	69.4
Average minimum temperature	49.5	49.3	38.9	47.6	44.8	47.1	46.7	50.2	44.2	46.9
Mean daily range of temperature	14.1	15.5	20.6	16.4	17.7	22.2	14.0	20.3	16.6	22.6
Average humidity	74.0	74.0	60.1	68.3	64.2	71.4	76.3	65.2	70.6	67.6
Average dew point					39.8	46.9	45.2	46.4	41.7	46.2
Prevailing wind	S.	S.	S.E.	N.	N.	S.	N.	S.W.	N.W.	N.W.
Total precipitation	3.09	4.88	1.70	1.37	3.78	3.70	8.14	.08	2.68	.94
Total velocity of wind	4,135	4,757	6,470	4,804	6,396	4,688	6,787	5,312	6,567	4,469
Maximum velocity of wind	24	22	36	28	28	26	35	24	37	24
Direction at time of maximum velocity	N.	S.W.	N.	N.	S.E. & N.	S.E.	S.	N.W. N.S.W.	N.W.	N.W.
Clear days	8	9	19	21	16	22	13	17	14	21
Fair days	11	12	7	5	6	5	7	11	12	8
Cloudy days	12	10	5	5	9	4	11	3	5	2
Days rain fell	14	15	8	7	13	6	15	2	12	6
Thunder and lightning storms	0	0	0	0	0	0	0	0	1	0
Solar halos	1	0	1	0	0	0	0	0	0	2
Lunar halos	0	0	0	0	1	0	0	0	2	0
Light frosts	2	1	3	5	5	0	10	0	2	0
Killing frosts	0	0	3	0	0	0	0	0	0	0
Days minimum temperature below 32°	0	0	1	0	0	0	0	0	0	0
Highest river	22.1	23.4	14.3	20.8	19.8	19.8	22.5	16.0	19.5	20.5
Lowest river	21.0	15.9	11.7	19.0	15.7	16.3	14.0	13.9	17.5	15.5
Range of river	1.1	7.5	2.6	1.8	4.1	3.5	8.5	2.1	2.0	5.0

APRIL WEATHER IN SACRAMENTO, FROM 1878 TO 1887.

The data contained in this table show the monthly average, the highest, lowest, and monthly range of the barometer; the monthly average, the highest, lowest, and monthly range of temperature; the greatest and least daily range of temperature; average maximum, minimum, and range of temperature; average relative humidity and dew point; total precipitation; prevailing direction, total, and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, with the total number of days rain fell; auroras; solar and lunar halos; light frosts; and the highest and lowest water in the river, along with the monthly range of same:

APRIL:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.89	30.02	30.04	29.93	30.05	30.04	29.98	29.96	29.95	29.99
Highest barometer	30.21	30.32	30.25	30.22	30.29	30.43	30.25	30.20	30.24	30.26
Lowest barometer	29.56	29.79	29.55	29.78	29.80	29.68	29.62	29.52	29.63	29.70
Monthly range of barometer	0.65	0.53	0.70	0.44	0.49	0.75	0.63	0.68	0.61	0.56
Average temperature	59.4	60.3	54.6	60.9	55.8	56.0	56.7	60.6	55.5	58.3
Highest temperature	78.0	83.0	78.0	84.0	82.2	76.0	74.2	83.0	79.7	83.5
Lowest temperature	41.0	44.6	40.0	44.0	40.5	39.8	40.0	39.0	39.0	41.2
Monthly range of temperature	37.0	38.4	38.0	40.0	41.7	36.2	34.2	44.0	40.7	42.3
Greatest daily range of temperature	27.0	28.0	24.0	26.0	32.8	31.0	22.5	31.0	26.2	32.0
Least daily range of temperature	11.0	6.5	6.0	6.0	7.0	10.0	6.0	10.0	5.3	8.3
Average maximum temperature	68.1	69.7	62.6	71.8	65.9	66.5	65.8	71.3	65.4	69.5
Average minimum temperature	49.8	51.1	47.5	52.7	47.2	46.6	49.5	51.5	48.1	48.9
Average daily range of temperature	18.3	18.6	15.1	19.1	18.7	19.9	16.3	19.8	17.3	20.7
Average humidity	65.6	65.4	73.0	70.6	64.2	66.1	74.6	71.1	75.8	65.5
Average dew point					42.4	43.8	48.2	50.5	47.3	45.5
Prevailing wind	S.	S.	S.	S.	N.	S.	S.W.	S.W.	S.	N.W.
Total precipitation	1.07	2.66	14.20	1.64	1.99	0.67	4.32	0.68	4.08	2.53
Total velocity of wind	4,759	4,814	6,597	4,787	5,785	5,933	5,609	5,069	5,725	6,320
Maximum velocity of wind	32	32	34	22	35	34	27	23	36	30
Direction of wind at time of maximum velocity	N.W.	N.	S.	S.	N.	N.W.	S.E.	S.	N.W.	N.W. & S.E.
Clear days	15	14	10	17	16	16	13	14	13	20
Fair days	12	9	10	9	9	13	7	12	12	7
Cloudy days	3	7	10	4	5	1	10	4	5	3
Foggy days	0	0	0	0	0	0	0	0	0	0
Days rain fell	4	12	16	8	9	8	9	7	12	10
Thunder and lightning storms	0	0	0	0	0	0	0	0	0	0
Auroras	0	0	0	0	1	0	0	0	0	0
Solar halos	0	1	1	0	1	3	3	0	3	0
Lunar halos	0	0	1	0	1	0	2	0	0	0
Light frosts	0	1	0	0	1	2	0	4	2	1
Highest river	21.7	22.8	24.4	20.6	21.2	19.8	23.5	15.2	23.7	20.5
Lowest river	19.5	21.0	14.1	19.7	19.8	16.3	19.8	13.4	17.4	19.3
Range of river	2.2	1.8	10.3	0.9	1.4	3.5	3.7	1.8	6.3	1.2

MAY WEATHER IN SACRAMENTO, FROM 1878 TO 1887.

The meteorological record of the following table consists of the average monthly, the highest, lowest, and monthly range of barometer; average monthly, the highest, lowest, and monthly range of temperature; greatest and least daily range of temperature; average, maximum, minimum, and range of temperature; average relative humidity and dew point; total precipitation; prevailing, total, and maximum velocity of wind; the direction at the time of maximum velocity; total number of clear, fair, and cloudy days, with the total number of days rain fell; light frosts; solar and lunar halos; number of days the maximum temperature was above 90°; and the highest, lowest, and monthly range of water in the river:

MAY:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.91	30.05	30.03	29.93	29.96	29.97	29.96	29.89	30.00	29.96
Highest barometer	30.11	30.27	30.24	30.12	30.19	30.27	30.12	30.04	30.19	30.25
Lowest barometer	29.62	29.84	29.79	29.77	29.75	29.74	29.75	29.69	29.78	29.71
Monthly range of barometer	0.49	0.43	0.45	0.35	0.44	0.53	0.37	0.35	0.41	0.54
Average temperature	65.5	60.2	61.6	64.8	64.0	62.6	64.0	65.7	62.0	62.9
Highest temperature	91.0	91.0	86.0	88.8	94.6	98.0	85.0	98.0	94.0	97.7
Lowest temperature	47.0	43.0	39.0	48.5	40.0	42.2	50.5	49.5	44.5	39.0
Monthly range of temperature	44.0	48.0	47.0	40.3	54.6	55.8	34.5	48.5	49.5	58.7
Greatest daily range of temperature	29.0	32.0	26.0	31.6	31.5	33.5	25.0	33.0	35.5	35.0
Least daily range of temperature	11.0	10.0	11.0	15.3	15.1	9.5	12.5	15.0	8.5	13.2
Average maximum temperature	76.7	71.3	71.5	78.5	76.8	73.7	75.4	79.8	75.4	75.9
Average minimum temperature	54.6	50.4	52.6	54.7	53.1	53.5	55.7	54.8	52.2	50.5
Average range of temperature	22.1	20.9	18.9	23.8	23.7	20.2	19.7	25.0	23.2	25.3
Average humidity	57.0	59.0	60.8	55.8	57.2	69.2	69.0	58.6	69.2	62.9
Average dew point					46.7	51.3	53.1	49.5	51.0	48.8
Prevailing wind	S.	S.W.	N.W.	S.	S.W.	S.	S.	S.W.	S.W.	S.W.
Total precipitation	0.17	1.30	0.76	spr.	0.35	2.85	0.06	spr.	0.07	spr.
Total velocity of wind	5.068	4.959	6.586	5.428	5.593	5.204	5.772	6.289	5.467	6.422
Highest velocity of wind	40	32	32	25	25	28	26	30	27	29
Direction of wind at highest velocity	N.	N.	N.W.	N.	N.W.	N.W.	S.W.	N.W.	N.W.	N.W.
Clear days	22	16	20	22	25	16	19	26	23	21
Fair days	5	13	7	8	4	8	9	5	6	9
Cloudy days	4	2	4	1	2	7	3	0	2	1
Days rain fell	3	5	3	1	3	10	3	1	2	1
Thunder and lightning storms	0	0	0	0	0	0	0	0	0	0
Light frosts	0	0	0	0	4	2	0	0	0	2
Solar halos	0	0	1	0	0	2	2	0	3	3
Lunar halos	0	0	0	0	0	0	1	0	0	0
Days maximum temperature above 90°	1	1	0	0	2	2	0	4	1	3
Highest river	20.3	21.8	23.9	20.0	21.3	20.7	22.8	13.8	23.0	20.5
Lowest river	18.8	17.1	22.7	15.2	20.2	16.3	12.0	11.0	21.0	18.0
Range of river	1.5	4.7	1.2	4.8	1.1	4.4	10.8	2.8	2.0	2.5

JUNE WEATHER IN SACRAMENTO, FROM 1878 TO 1887.

The recorded data below gives the monthly average barometer, along with the highest, lowest, and monthly range of barometer; the average monthly temperature, with the highest, lowest, and monthly range of temperature; the greatest and least daily range of temperature; the mean maximum, minimum, and average range of temperature; average relative humidity and dew point; the prevailing direction, total, and maximum velocity of wind, along with the direction at the time of maximum velocity; the total number of clear, fair, and cloudy days, and the number of days rain fell; solar and lunar halos; total number of days the maximum temperature was above 90°; and the highest, lowest, and monthly range of water in the river:

JUNE:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.83	29.84	29.92	29.91	29.88	29.91	29.95	29.94	29.87	29.82
Highest barometer	30.12	30.08	30.19	30.11	30.08	30.20	30.14	30.12	30.06	30.04
Lowest barometer	29.67	29.65	29.73	29.70	29.72	29.63	29.77	29.73	29.65	29.55
Monthly range of barometer	0.45	0.43	0.46	0.41	0.36	0.57	0.37	0.39	0.41	0.49
Average temperature	71.8	72.1	66.6	66.2	68.1	72.6	65.8	66.2	69.0	69.1
Highest temperature	99.0	100.0	88.0	93.5	94.6	102.5	92.0	91.0	97.7	100.0
Lowest temperature	49.0	52.0	51.0	48.0	51.2	49.8	52.9	51.0	51.5	47.0
Monthly range of temperature	50.0	48.0	37.0	45.5	43.4	52.7	39.1	40.0	46.2	53.0
Greatest daily range of temperature	36.0	33.0	30.0	31.9	33.4	36.0	30.0	34.0	35.5	37.0
Least daily range of temperature	17.0	17.0	14.0	13.1	15.0	15.1	8.5	13.0	15.0	17.1
Mean maximum temperature	86.0	85.7	79.9	80.5	82.7	88.1	76.3	79.9	85.3	84.4
Mean minimum temperature	58.4	59.8	55.8	56.0	56.4	60.1	57.6	55.9	57.0	55.1
Mean range of temperature	27.6	25.9	24.1	24.5	26.3	28.0	18.7	24.0	28.3	29.4
Average humidity	53.0	50.4	52.3	54.9	59.3	59.5	69.8	59.0	60.4	59.2
Average dew point					52.1	56.4	55.1	50.4	53.5	52.6
Prevailing wind	S.	S.	S.	S.	S.	S.	S.	S.W.	S.	S.W.
Total precipitation	none	0.13	none	0.50	0.10	none	1.45	0.11	none	none
Total velocity of wind	4.874	5.062	5.947	5.684	5.529	5.928	5.506	6.716	5.837	5.791
Maximum velocity of wind	20	26	22	22	23	31	22	24	42	30
Direction at time of maximum velocity	N.W.	N.	S.	S.W.	S.	N.W.	S.W.	S.W.	N.W.	S.W.
Clear days	27	23	29	24	25	28	18	24	30	24
Fair days	3	7	1	5	4	2	5	5	0	6
Cloudy days	0	0	0	1	1	0	7	1	0	0
Days rain fell	0	1	0	2	1	0	7	2	0	0
Thunder and lightning storms	0	0	0	0	0	0	0	0	0	0
Solar halos	0	0	0	0	1	2	0	1	0	1
Lunar halos	0	0	0	0	0	0	0	0	0	0
Number of days maximum temperature was above 90°	6	10	0	2	5	11	1	2	5	8
Highest river	18.6	18.0	22.8	15.8	20.5	20.0	22.0	11.0	20.8	18.3
Lowest river	13.5	13.2	20.8	11.3	14.0	10.8	19.3	9.0	13.9	10.7
Range of river	5.1	4.8	2.0	4.5	6.5	9.2	2.7	2.0	6.9	7.6

JULY WEATHER IN SACRAMENTO, FROM 1877 TO 1887.

In this table will be found the monthly average, highest, lowest, and monthly range of barometer; the monthly average, highest, lowest, and monthly range of temperature; the greatest and least daily range of temperature; the average maximum, minimum, and range of temperature; average relative humidity and dew point; total precipitation; the prevailing direction, total, and maximum velocity of wind, along with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, and number of days rain fell; solar halos; number of days the maximum temperature was above 90°; and the highest, lowest, and range of water in the river:

JULY:	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer.....	29.82	29.83	29.85	29.88	29.91	29.91	29.89	29.92	29.90	29.84	29.89
Highest barometer.....	29.99	29.97	30.02	30.02	30.14	30.10	30.10	30.10	30.10	30.05	30.11
Lowest barometer.....	29.64	29.71	29.67	29.69	29.72	29.74	29.64	29.78	29.70	29.67	29.74
Monthly range of barometer...	0.35	0.26	0.35	0.33	0.42	0.36	0.46	0.32	0.40	0.38	0.37
Average temperature.....	75.0	73.4	71.8	70.9	71.1	73.4	73.1	71.2	71.0	72.0	70.2
Highest temperature.....	103.0	98.0	100.0	98.0	98.6	97.8	103.5	96.0	98.0	105.0	99.2
Lowest temperature.....	52.0	52.0	51.0	55.0	51.9	55.9	56.0	54.5	56.0	52.2	48.0
Monthly range of temperature	51.0	46.0	49.0	43.0	46.7	41.9	47.5	41.5	42.0	52.8	51.2
Greatest daily range of temperature	39.0	38.0	34.0	34.0	35.7	35.6	37.0	31.8	35.0	37.8	40.0
Least daily range of temperature	15.0	17.0	21.0	21.0	19.5	21.6	22.0	15.1	16.0	24.5	25.5
Mean maximum temperature	91.4	88.5	87.6	86.3	87.1	90.1	90.6	85.4	86.2	89.7	88.3
Mean minimum temperature	60.0	58.8	57.6	59.1	59.2	60.6	60.7	60.1	59.7	58.9	54.3
Mean range of temperature...	31.4	29.7	30.0	27.2	27.9	29.5	29.9	25.3	26.5	30.8	34.0
Average humidity.....	43.0	50.7	51.5	55.9	51.2	54.4	57.8	59.4	55.1	60.2	59.1
Average dew point.....						54.5	56.3	55.5	52.9	56.3	53.9
Prevailing wind.....	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
Total precipitation.....	spr.	none	spr.	spr.	spr.	spr.	none	none	spr.	none	none
Total velocity of wind.....	4.572	4.445	4.602	5.333	5.579	5.443	5.084	5.778	6.594	4.850	5.589
Maximum velocity of wind...	20	15	15	18	20	28	17	24	25	20	24
Direction at time of maximum velocity	S.	S.	S.W.	S.	N.W.	N.W.	S.W.	S.W.	S.	S.W.	S., S.W.
Clear days.....	29	31	29	26	31	31	31	29	27	30	31
Fair days.....	1	0	2	5	0	0	0	2	4	1	0
Cloudy days.....	1	0	0	0	0	0	0	0	0	0	0
Days rain fell.....	1	0	1	2	1	2	0	0	1	0	0
Thunder and lightning storms	0	0	0	0	0	0	0	0	0	0	0
Solar halos.....	0	0	0	0	0	0	1	0	1	0	0
Lunar halos.....	0	0	0	0	0	0	0	0	0	0	0
Number of days maximum temperature was above 90°	20	14	11	5	10	15	12	7	9	13	13
Highest river.....	8.4	13.3	12.8	20.6	11.0	13.5	10.8	19.3	9.0	13.7	11.0
Lowest river.....	5.8	8.5	8.3	13.3	8.2	8.7	7.8	11.8	7.8	10.0	8.1
Range of river.....	2.6	4.8	4.5	7.3	2.8	4.8	3.0	7.5	1.2	3.7	2.9

AUGUST WEATHER IN SACRAMENTO, FROM 1877 TO 1887.

The meteorological data contained in the following report shows the monthly average barometer; highest, lowest, and monthly range of barometer; monthly average temperature; the highest, lowest, and monthly range of temperature; greatest and least daily range of temperature; monthly average maximum, minimum, and range of temperature; average relative humidity and dew point; total rainfall; prevailing direction, total velocity, and maximum velocity of wind, along with the direction at time of maximum velocity; total number of clear, fair, and cloudy days and number of days rain fell; number of days the maximum temperature was above 90°: and the highest, lowest, and monthly range of water in the river:

AUGUST:	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.89	29.82	29.80	29.84	29.89	29.89	29.92	29.89	29.83	29.83	29.80
Highest barometer	30.06	30.06	30.03	30.05	30.14	30.09	30.09	30.09	29.98	29.97	29.96
Lowest barometer	29.76	29.63	29.62	29.58	29.72	29.73	29.77	29.73	29.64	29.70	29.63
Monthly range of barometer	0.30	0.43	0.41	0.47	0.42	0.36	0.32	0.36	0.34	0.27	0.33
Average temperature	72.9	73.4	74.7	69.7	68.2	71.9	71.4	72.5	73.0	71.6	69.1
Highest temperature	95.0	100.5	103.0	97.0	94.6	99.8	100.0	100.0	105.0	102.0	99.7
Lowest temperature	54.0	53.0	54.0	49.0	51.0	55.0	54.8	54.0	51.5	53.2	48.0
Monthly range of temperature	41.0	47.5	49.0	48.0	43.6	44.8	45.2	46.0	53.5	48.8	51.7
Greatest daily range of temperature	39.0	35.0	40.0	33.0	35.3	35.6	38.5	33.8	42.0	42.8	43.0
Least daily range of temperature	23.0	18.0	19.0	19.0	21.7	23.0	19.0	20.5	21.5	23.0	22.0
Mean maximum temperature	89.7	88.2	90.9	85.4	84.6	89.4	88.9	88.7	91.9	90.4	86.6
Mean minimum temperature	56.4	58.9	60.4	57.0	56.0	58.6	59.2	60.8	59.8	58.4	53.6
Mean range of temperature	33.3	29.3	30.5	28.4	28.6	30.8	29.7	27.9	32.1	32.0	33.0
Average humidity	46.0	52.0	49.2	56.1	56.9	57.3	57.8	60.8	53.2	57.8	60.7
Average dew point						54.7	54.4	57.5	53.3	54.8	53.5
Prevailing wind	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
Total precipitation	spr.	none	spr.	none	none	none	none	spr.	none	none	spr.
Total velocity of wind	3.650	3.984	3.981	4.786	5.189	4.477	4.597	5.234	5.164	4.233	5.085
Maximum velocity of wind	20	13	14	20	19	16	18	18	18	18	24
Direction at time of maximum velocity	S.	S.	S.&N.	S.	S.W.	S.	N.W.	S.W.	S.W.	S.W.	S.
Clear days	31	25	29	30	31	31	30	29	30	31	31
Fair days	0	6	2	1	0	0	1	2	1	0	0
Cloudy days	0	0	0	0	0	0	0	0	0	0	0
Days rain fell	1	0	1	0	0	0	0	1	0	0	1
Thunder and lightning storms	0	0	0	0	0	0	0	0	0	0	0
Solar halos	0	0	0	0	0	0	0	0	0	0	0
Lunar halos	0	0	0	0	0	0	0	0	0	0	0
Number of days maximum temperature above 90°	16	10	17	7	4	12	11	13	19	17	10
Highest river	5.8	8.3	8.1	13.3	8.0	8.6	7.8	11.5	7.8	10.0	8.1
Lowest river	5.2	6.4	6.5	9.3	6.7	6.9	6.8	8.6	7.3	8.2	7.4
Range of river	0.6	1.9	1.6	4.0	1.3	1.7	1.0	2.9	0.5	1.8	0.7

SEPTEMBER WEATHER IN SACRAMENTO, FROM 1877 TO 1887.

The following table gives the monthly average barometer; the highest, lowest, and monthly range of barometer; the monthly average temperature; the highest, lowest, and monthly range of temperature; the greatest and least daily ranges of temperature; the monthly average maximum, minimum, and range of temperature; the average relative humidity and dew point; total rainfall; the prevailing direction, total, and maximum velocity of wind, with the direction at time of the maximum velocity; total number of clear, fair, and cloudy days, and number of days rain fell; solar and lunar halos; number of days the maximum temperature was above 90°; and the highest, lowest, and monthly range of water in the river:

SEPTEMBER:	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer.....	29.85	29.92	29.91	29.92	29.89	29.93	29.90	29.93	29.86	29.87	29.87
Highest barometer.....	30.10	30.12	30.05	30.06	30.16	30.19	30.05	30.16	29.97	30.04	30.04
Lowest barometer.....	29.70	29.77	29.77	29.73	29.61	29.77	29.72	29.62	29.74	29.77	29.65
Monthly range of barometer.....	0.40	0.35	0.28	0.33	0.55	0.42	0.33	0.54	0.23	0.27	0.39
Average temperature.....	72.8	69.0	70.5	68.0	67.8	68.4	71.6	64.8	69.8	67.9	70.4
Highest temperature.....	98.0	92.0	96.0	92.0	96.1	99.6	101.0	93.5	98.5	96.0	100.0
Lowest temperature.....	49.0	48.0	52.0	48.0	50.0	44.4	52.9	49.0	50.5	49.0	45.7
Monthly range of temperature.....	49.0	44.0	44.0	44.0	46.1	55.2	48.1	44.5	48.0	47.0	54.3
Greatest daily range of temperature.....	40.0	34.0	37.0	35.0	37.7	36.5	40.0	33.0	41.8	40.0	39.5
Least daily range of temperature.....	19.0	12.0	19.0	23.0	12.8	5.2	10.0	19.0	14.0	20.0	16.2
Mean maximum temperature.....	87.6	81.6	85.3	83.2	82.1	82.7	87.3	79.5	88.2	86.0	86.3
Mean minimum temperature.....	57.3	55.6	57.3	54.9	55.5	56.8	59.6	53.5	56.3	55.0	55.3
Mean range of temperature.....	30.3	26.0	28.0	28.3	26.6	25.9	27.7	26.0	31.9	31.0	31.0
Average humidity.....	43.0	51.0	54.4	54.9	52.8	59.4	57.6	63.4	52.6	59.0	53.3
Average dew point.....					48.5	52.0	54.6	51.2	49.4	51.5	50.9
Prevailing wind.....	S.	S.	S.	S.	S.	S.E. & S.	S.	S.	S.	S.	N.W.
Total precipitation.....	none	0.29	none	none	0.30	0.57	0.90	0.60	0.08	none	.02
Total velocity of wind.....	4.009	4.051	3.395	4.014	4.694	3.905	3.657	4.847	4.468	3.364	4.052
Maximum velocity of wind.....	20	24	22	16	22	27	16	27	20	26	24
Direction at time of maximum velocity.....	N.W.	N.	N.W.	N.	N.W.	N.W.	S.W. & S.	N.W.	N.W.	N.W.	N.W. & S.W.
Clear days.....	30	23	23	28	26	26	24	27	27	30	23
Fair days.....	0	6	7	1	4	3	5	3	3	0	7
Cloudy days.....	0	1	0	1	0	1	1	0	0	0	0
Days rain fell.....	0	3	0	0	1	2	3	4	1	0	3
Thunder and lightning storms.....	0	0	0	0	0	0	0	0	0	0	1
Solar halos.....	0	0	1	1	0	1	0	0	1	0	2
Lunar halos.....	0	0	0	0	0	0	0	0	0	0	0
Number of days maximum temperature rose above 90°.....	12	4	10	4	5	8	8	1	11	9	10
Highest river.....	5.2	6.3	6.4	9.3	6.8	6.8	6.8	8.5	7.8	8.2	7.3
Lowest river.....	5.2	5.5	5.8	7.8	6.4	6.5	6.5	7.8	7.3	7.4	7.2
Range of river.....	0.0	0.8	0.6	1.5	0.4	0.3	0.3	0.7	0.5	0.8	0.1

OCTOBER WEATHER IN SACRAMENTO, FROM 1877 TO 1887.

The weather changes, etc., in the following review, show the monthly average barometer; the highest, lowest, and monthly range of barometer; monthly average temperature; the highest, lowest, and monthly range of temperature; greatest and least daily range of temperature; highest, lowest, and range of temperature; mean maximum, minimum, and range of temperature; the average relative humidity and dew point; total rainfall; prevailing direction, total, and maximum velocity of wind, and the direction at the time of maximum velocity; total number of clear, fair, and cloudy days, with total number of days rain fell; solar and lunar halos; light frosts; number of days maximum temperature was above 90°; and the highest, lowest, and monthly range of water in the river :

OCTOBER :	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer.....	29.97	29.98	30.01	30.02	30.03	30.02	30.00	29.99	29.95	30.02	29.96
Highest barometer.....	30.16	30.23	30.28	30.23	30.30	30.28	30.31	30.19	30.14	30.28	30.21
Lowest barometer.....	29.83	29.68	29.66	29.74	29.79	29.80	29.62	29.74	29.68	29.80	29.74
Monthly range of barometer.....	0.33	0.55	0.62	0.49	0.51	0.48	0.69	0.45	0.46	0.48	0.47
Average temperature.....	62.9	62.9	61.5	62.1	56.8	58.4	58.2	59.9	64.3	57.1	66.5
Highest temperature.....	88.0	86.0	87.0	85.0	81.0	76.8	81.0	80.5	98.0	85.5	92.0
Lowest temperature.....	38.0	40.0	40.0	46.0	36.4	38.8	42.2	42.0	40.0	38.5	42.0
Monthly range of temperature.....	50.0	46.0	37.0	39.0	44.6	38.0	38.8	38.5	58.0	47.0	50.0
Greatest daily range of temperature.....	32.0	34.0	34.0	31.0	35.0	27.1	28.0	31.0	39.3	36.0	38.0
Least daily range of temperature.....	11.0	5.0	14.0	12.0	7.1	7.0	10.1	3.5	19.0	6.0	17.7
Mean maximum temperature.....	70.2	75.3	74.0	75.0	68.7	68.6	69.5	72.1	79.9	70.9	81.2
Mean minimum temperature.....	50.2	48.6	48.9	49.8	46.5	49.0	48.4	49.6	51.4	46.7	51.6
Mean range of temperature.....	20.0	26.7	25.1	25.2	22.2	19.6	21.1	22.5	28.5	24.2	29.6
Average humidity.....	49.0	54.0	63.1	54.3	62.6	72.5	71.2	71.2	62.3	69.7	46.0
Average dew point.....					42.2	48.7	48.0		49.8	49.1	46.2
Prevailing wind.....	N.	N.	S.	N.	S.	S.	S.	S.E. & N.	N.W.	N.W.	N.W.
Total precipitation.....	0.73	0.55	0.88	none	0.55	2.63	0.97	2.01	0.02	0.68	none
Total velocity of wind.....	4.044	4.078	3.077	3.656	4.538	3.897	3.988	3.495	3.761	3.583	4.624
Maximum velocity of wind.....	28	28	16	18	19	28	21	20	18	17	33
Direction at time of maximum velocity.....	N. & N.W.	N.	N.W.	S.W. & N.W.	S.W. & N.	S.E.	S.E.	S.W.	S.W.	N.W.	N.W.
Clear days.....	27	28	23	23	22	19	19	26	20	22	28
Fair days.....	0	1	5	7	8	10	9	4	9	9	3
Cloudy days.....	4	2	3	1	1	2	3	1	2	0	0
Days rain fell.....	5	1	4	0	7	7	8	5	3	5	0
Solar halos.....	0	0	1	1	0	0	0	0	1	1	0
Lunar halos.....	0	0	1	0	0	0	0	1	0	0	0
Thunder and lightning.....	0	0	0	0	0	0	0	0	1	0	0
Light frosts.....	2	1	0	0	3	8	10	3	0	0	0
Number of days maximum temperature above 90°.....	0	0	0	0	0	0	0	0	4	0	4
Highest river.....	6.2	7.0	7.4	7.8	8.2	11.8	8.3	10.1	7.6	8.4	7.2
Lowest river.....	5.2	5.5	5.8	7.6	6.4	6.8	6.8	7.8	7.4	7.4	7.2
Range of river.....	1.0	1.5	1.6	0.2	1.8	6.0	1.5	2.3	0.2	1.0	0.0

NOVEMBER WEATHER IN SACRAMENTO, FROM 1877 TO 1887.

This meteorological table shows the monthly average barometer; highest, lowest, and monthly range of barometer; monthly average temperature; highest, lowest, and monthly range of temperature; the greatest and least daily range of temperature; mean maximum, minimum, and range of temperature; monthly average relative humidity and dew point; total precipitation; prevailing direction, total, and maximum velocity of wind, and direction at the time of maximum velocity; total number of clear, fair, and cloudy days, and total number of days rain fell; solar and lunar halos; light and killing frosts; number of days the minimum temperature was below 32°; and the highest, lowest, and monthly range of water in the river:

NOVEMBER:	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	30.11	30.09	30.10	30.16	30.16	30.12	30.13	30.08	29.98	30.15	30.04
Highest barometer	30.54	30.47	30.41	30.49	30.44	30.45	30.41	30.27	30.27	30.37	30.31
Lowest barometer	29.82	29.78	29.38	29.83	29.92	29.84	29.93	29.79	29.46	29.58	29.73
Monthly range of barometer	0.52	0.69	1.03	0.66	0.52	0.61	0.48	0.48	0.81	0.79	0.58
Average temperature	54.7	55.5	50.9	49.7	50.8	49.5	50.5	55.3	54.4	50.4	54.7
Highest temperature	70.0	72.0	70.0	76.0	71.0	65.6	71.0	75.2	77.0	74.2	75.2
Lowest temperature	37.0	34.0	33.0	27.0	32.0	34.0	29.0	37.7	38.5	32.2	28.0
Monthly range of temperature	33.0	38.0	37.0	49.0	39.0	31.6	42.0	37.5	38.5	42.0	47.2
Greatest daily range of temperature	27.0	31.0	28.0	36.0	28.1	22.6	28.0	29.5	28.2	34.2	35.5
Least daily range of temperature	8.0	10.0	8.0	7.0	8.0	41.8	6.6	16.0	4.3	6.2	10.0
Mean maximum temperature	62.6	65.3	60.6	60.7	61.1	57.8	62.1	67.6	61.6	63.0	67.5
Mean minimum temperature	44.4	43.2	41.0	38.0	40.1	41.3	40.1	44.7	48.2	38.6	41.6
Mean range of temperature	18.2	22.1	19.6	22.7	21.0	16.5	22.0	22.9	13.4	24.4	25.9
Average humidity	72.0	66.0	73.5	51.6	61.8	76.9	77.5	72.6	84.1	64.9	62.8
Average dew point					36.6	41.9	43.4	46.1	49.2	37.6	41.1
Prevailing wind	N.	N.	N.	N.	N.	N.W.	S.E.	N.	S.E.	N.W.	N.W.
Total precipitation	1.07	0.51	2.05	0.05	1.88	3.22	0.61	none	11.34	0.21	0.45
Total velocity of wind	2.616	3.140	4.020	3.848	3.761	3.411	3.126	2.317	5.985	3.685	3.190
Maximum velocity of wind	23	32	36	28	24	32	25	22	36	36	27
Direction at time of maximum velocity	N.	N.	N.	N.	N.	N.W.	N.W.	S.E.	S.E.	N.W.	N.W.
Clear days	18	20	13	20	25	16	24	22	4	26	24
Fair days	6	9	8	6	3	9	4	6	11	3	3
Cloudy days	6	1	9	4	2	5	2	2	15	1	3
Days rain fell	8	3	9	2	4	7	3	0	21	2	4
Solar halos	0	0	0	0	0	0	0	1	0	0	0
Lunar halos	1	0	1	0	0	0	0	3	0	0	0
Light frosts	1	5	5	4	8	18	9	14	3	20	5
Killing frosts	0	3	4	12	3	0	6	0	0	2	3
Number of days minimum temperature below 32°	0	0	0	9	0	0	2	0	0	0	2
Highest river	9.4	8.3	8.6	7.6	9.0	13.1	7.9	8.0	20.6	8.0	7.6
Lowest river	5.6	5.5	6.0	7.4	6.8	7.7	7.3	7.8	7.4	7.7	7.2
Range of river	3.8	2.8	2.6	0.2	2.2	5.4	0.6	0.2	13.2	0.3	0.4

DECEMBER WEATHER IN SACRAMENTO, FROM 1877 TO 1887.

The weather review in the following table shows the monthly average barometer; highest, lowest, and monthly range of barometer; the monthly average temperature; highest, lowest, and monthly range of temperature; the greatest and least daily range of temperature; the mean, maximum, minimum, and range of temperature; the average relative humidity and dew point; total precipitation; prevailing direction, total and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, cloudy, and foggy days, and total number of days rain fell; solar and lunar halos; light and killing frosts; number of days the minimum temperature was below 32°; and the highest, lowest, and monthly range of water in the river:

DECEMBER :	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	30.05	30.13	30.13	30.04	30.20	30.18	30.18	29.96	30.14	30.16	30.13
Highest barometer	30.38	30.51	30.68	30.46	30.41	30.38	30.49	30.30	30.35	30.40	30.35
Lowest barometer	29.66	29.78	29.47	29.48	29.88	29.77	29.72	29.49	29.77	29.86	29.50
Monthly range of barometer	0.72	0.73	1.21	0.98	0.53	0.61	0.77	0.81	0.58	0.54	0.85
Average temperature	48.6	47.2	44.0	50.3	46.2	48.2	44.2	48.8	49.1	49.2	46.9
Highest temperature	67.0	66.3	63.0	63.0	62.0	68.0	67.0	65.0	64.7	65.2	65.0
Lowest temperature	32.0	23.5	25.0	38.0	31.9	27.0	24.0	27.0	37.7	32.0	29.0
Monthly range of temperature	35.0	42.8	38.0	25.0	30.1	41.0	43.0	38.0	27.0	33.2	36.0
Greatest daily range of temperature	27.0	28.5	21.0	13.0	20.9	23.2	31.0	27.5	16.0	32.2	31.5
Least daily range of temperature	6.0	13.0	7.0	3.0	5.0	7.5	6.5	5.0	2.8	5.5	7.5
Mean maximum temperature	56.3	57.2	50.4	54.4	52.7	55.7	53.3	56.2	53.8	57.6	55.6
Mean minimum temperature	39.3	34.7	36.5	45.4	39.6	40.1	36.4	41.6	45.0	42.2	37.6
Mean range of temperature	17.0	22.5	13.9	9.0	13.1	15.6	16.9	14.6	8.8	15.4	18.0
Average humidity	74.0	55.0	84.0	87.9	85.5	82.4	88.5	71.1	90.3	82.9	77.6
Average dew point					41.7	42.6	40.7	38.9	40.2	43.8	39.7
Prevailing wind	N.	N.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.
Total precipitation	1.43	0.47	3.41	11.81	3.27	1.13	0.44	10.45	5.76	2.21	2.09
Total velocity of wind	3,187	4,031	4,928	6,453	3,717	3,544	2,845	7,817	4,458	3,294	5,064
Maximum velocity of wind	16	30	39	40	24	19	16	36	25	25	40
Direction at time of maximum velocity	S.	N.	S.	S.E.	S.E.	W.S.E. & S.W.	W.	N.W.	N.W.	S.E.	S.E.
Clear days	13	22	11	3	15	16	17	13	11	12	15
Fair days	11	5	8	5	9	11	10	8	7	11	13
Cloudy days	7	4	12	23	7	4	4	10	13	8	3
Foggy days	0	0	4	3	5	1	8	0	3	0	0
Days rain fell	5	4	12	22	12	8	8	14	10	8	10
Days snow fell	0	0	0	0	0	1	0	0	0	0	0
Solar halos	0	0	0	0	1	0	0	0	0	1	0
Lunar halos	0	0	0	0	0	0	0	0	1	0	0
Light frost	6	7	2	0	7	13	4	13	5	3	3
Killing frost	6	13	8	0	1	2	8	5	0	2	10
Number of days the minimum temperature was below 32°	0	10	8	0	1	1	3	4	0	0	3
Highest river	10.7	6.6	17.5	20.3	15.4	10.8	9.8	24.6	23.8	10.8	10.8
Lowest river	6.4	5.7	11.1	7.6	7.7	8.5	7.0	7.5	17.2	7.7	7.5
Range of river	4.3	0.9	6.4	12.7	7.7	2.3	2.8	17.1	0.6	3.1	3.3

COMPARATIVE WINTER WEATHER IN SACRAMENTO, FROM 1877-78 TO 1887-88.

This table of winter comparisons shows the average, highest, lowest, and range of barometer; average, highest, lowest, and range of temperature; the average relative humidity, and the average dew point; total rainfall; prevailing wind; total and maximum velocity, with the direction of wind at the time of maximum velocity; total number of clear, fair, cloudy, and foggy days, and total number of days rain fell; number of snow storms; solar and lunar halos; light and killing frosts; number of days the temperature was below 32°; and the highest, lowest, and monthly range of water in the river during each winter:

WINTER OF:	1877-78	1878-79	1879-80	1880-81	1881-82	1882-83	1883-84	1884-85	1885-86	1886-87	1887-88
Average barometer.....	30.00	30.12	30.16	30.12	30.17	30.19	30.12	30.09	30.10	30.11	30.15
Highest barometer.....	30.38	30.51	30.68	30.46	30.52	30.74	30.58	30.43	30.40	30.51	30.63
Lowest barometer.....	29.46	29.77	29.47	29.48	29.75	29.68	29.42	29.49	29.32	29.54	29.50
Range of barometer.....	0.92	0.74	1.21	0.98	0.77	1.06	1.16	0.94	1.08	0.99	1.13
Average temperature.....	49.9	49.2	44.5	51.0	45.9	45.4	45.9	50.0	49.4	47.5	47.4
Highest temperature.....	67.0	73.5	64.0	67.0	62.8	71.7	71.0	70.0	72.7	67.0	75.0
Lowest temperature.....	27.0	23.5	25.0	35.0	29.0	22.0	21.0	27.0	27.5	30.0	19.0
Range of temperature.....	40.0	50.0	39.0	32.0	33.8	49.7	50.0	43.0	45.2	37.0	56.0
Average humidity.....	77.1	68.3	77.2	84.0	76.4	77.9	83.0	77.7	87.1	77.6	76.6
Average dew point.....					38.1	38.2	40.6	42.6	43.3	40.2	39.8
Prevailing wind.....	S.E.	N.	S.E.	S.E.	N.	S.E.	S.E.	N.W.	N.W.	S.E.	S.E.
Total precipitation.....	18.74	7.53	6.88	23.01	7.56	4.47	8.33	13.10	14.00	9.61	7.47
Total velocity of wind.....	13,452	12,650	13,735	16,092	14,611	11,131	12,294	16,406	13,889	14,003	13,944
Maximum velocity of wind.....	36	33	39	40	32	36	33	36	44	33	40
Direction at time of maximum velocity.....	S.E.	N.	S.	S.E.	N.	N.W.	S.	N.W.	S.E.	N.W.	S.E.
Clear days.....	26	44	39	14	46	52	47	40	42	41	44
Fair days.....	28	31	17	26	26	30	25	28	29	29	32
Cloudy days.....	36	15	35	50	18	8	19	23	19	20	15
Foggy days.....	0	0	6	6	5	4	8	0	7	0	0
Days rain fell.....	39	23	29	46	30	16	26	28	26	28	33
Snow storms.....	0	1	1		2	3	0	0	0	0	3
Solar halos.....	0	0	1	1	3	0	3	0	0	1	1
Lunar halos.....	0	0	3	2	1	0	2	0	1	0	0
Number of light frosts.....	9	15	11	11	27	19	5	25	8	10	5
Number of killing frosts.....	12	26	17	0	11	28	25	5	6	15	24
Number of days minimum temperature below 32°.....	5	17	17	0	5	23	11	4	4	4	15
Highest river.....	25.9	20.0	17.5	26.6	17.0	12.2	17.6	24.6	25.6	18.6	20.0
Lowest river.....	7.3	5.6	11.3	7.6	7.7	8.1	7.0	7.5	17.1	7.7	7.5
Range of river.....	18.6	14.4	6.2	19.0	9.3	4.1	10.6	17.1	8.5	10.9	12.5

COMPARATIVE SPRING WEATHER IN SACRAMENTO, FROM 1878 TO 1887.

The following table shows the average barometer; highest, lowest, and range of barometer; the average temperature; highest, lowest, and range of temperature; the average relative humidity and dew point; total rainfall; prevailing direction, total, and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, and number of days rain fell; solar and lunar halos; light and killing frosts; number of days maximum temperature above 90°; number of days minimum temperature below 32°; and the highest, lowest, and range of water in the river during each spring:

SPRING OF:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer.....	29.94	30.05	30.06	30.01	30.04	30.01	29.97	29.97	30.00	29.96
Highest barometer.....	30.39	30.33	30.36	30.41	30.38	30.43	30.30	30.37	30.35	30.27
Lowest barometer.....	29.56	29.73	29.55	29.68	29.71	29.62	29.51	29.52	29.63	29.65
Range of barometer.....	0.83	0.60	0.81	0.73	0.67	0.81	0.79	0.85	0.72	0.62
Average temperature.....	60.5	59.3	55.0	60.4	57.6	58.5	57.9	61.8	56.5	59.7
Highest temperature.....	91.0	91.0	86.0	88.8	94.6	98.0	85.0	98.0	94.0	98.0
Lowest temperature.....	40.0	38.0	29.0	37.0	34.1	39.8	39.0	39.0	37.7	39.0
Range of temperature.....	51.0	53.0	57.0	51.8	60.5	58.2	46.0	59.0	56.3	59.0
Average humidity.....	67.1	68.4	66.2	68.4	61.9	68.9	73.3	64.9	71.9	65.3
Average dew point.....					43.0	47.3	48.8	48.8	46.7	46.8
Prevailing wind.....	S.	S.E.	S.E.	S.	N.	S.	S.W.	S.W.	S.W.	N.W.
Total precipitation.....	4.33	8.84	16.66	3.01	6.12	7.22	12.52	.76	6.83	3.52
Total velocity of wind.....	13,962	14,530	19,653	14,966	17,774	15,825	18,168	16,670	17,759	17,211
Maximum velocity of wind.....	40	32	36	28	35	34	35	30	37	30
Direction at time of maximum velocity.....	N.	N.	N.	N.	N.	N.W.	S.	N.W.	N.W.	N.W.
Clear days.....	45	39	49	60	57	54	46	58	50	61
Fair days.....	28	34	24	22	19	26	23	28	30	24
Cloudy days.....	19	19	19	10	16	12	23	6	12	6
Days rain fell.....	21	32	27	16	25	24	27	11	26	17
Solar halos.....	1	1	3	0	1	5	5	0	6	5
Lunar halos.....	0	0	1	0	2	0	3	0	2	0
Number of light frosts.....	2	2	3	5	6	2	10	4	4	3
Number of killing frosts.....	0	0	3	0	0	0	0	0	0	0
Number of days maximum temperature above 90°.....	1	1	0	0	2	2	0	4	1	3
Number of days minimum temperature below 32°.....	0	0	1	0	0	0	0	0	0	0
Highest river.....	22.1	23.4	24.4	20.8	21.3	20.7	23.5	16.0	23.7	20.5
Lowest river.....	18.8	15.9	11.7	15.2	15.7	16.3	12.0	11.0	17.4	15.5
Range of river.....	3.3	7.5	12.7	5.6	5.6	4.4	11.5	5.0	6.3	5.0

COMPARATIVE SUMMER WEATHER IN SACRAMENTO, FROM 1878 TO 1887.

The following comparative meteorological report shows the average barometer: highest, lowest, and range of barometer; average temperature; highest, lowest, and range of temperature; average relative humidity and dew point: total precipitation: prevailing direction: total, and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, and number of days rain fell; solar and lunar halos: number of days maximum temperature was above 90°; and the highest, lowest, and range of water in the river during each summer:

SUMMER OF:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.82	29.82	29.88	29.90	29.90	29.91	29.92	29.87	29.85	29.78
Highest barometer	30.12	30.08	30.19	30.14	30.10	30.20	30.14	30.12	30.06	30.06
Lowest barometer	29.63	29.62	29.58	29.70	29.72	29.63	29.73	29.64	29.65	29.50
Range of barometer	0.49	0.46	0.61	0.44	0.38	0.57	0.41	0.48	0.41	0.56
Average temperature	72.9	72.9	69.1	68.5	71.1	72.4	69.8	70.1	70.9	69.5
Highest temperature	109.5	103.0	98.0	98.6	99.8	103.5	100.0	105.0	105.0	100.0
Lowest temperature	49.0	51.0	49.0	48.0	51.2	49.8	52.9	51.5	51.5	47.0
Range of temperature	51.5	52.0	49.0	50.6	48.6	53.7	47.1	43.5	53.5	53.0
Average humidity	54.7	52.7	59.3	56.3	57.0	58.4	63.3	55.8	59.5	59.7
Average dew point					53.8	55.7	56.0	52.2	54.8	53.3
Prevailing wind	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
Total precipitation	none	0.13	spr.	0.50	0.10	none	1.45	0.11	none	spr.
Total velocity of wind	13.303	13.645	16.066	16.531	15.449	15.609	16.518	18.474	14.917	16.465
Maximum velocity of wind	20	26	22	22	28	31	24	25	42	30
Direction at time of maximum velocity	N.W.	N.	S.	S.W.	N.W.	N.W.	S.W.	S.	N.W.	S.W.
Clear days	83	81	85	86	87	89	77	81	91	86
Fair days	9	11	7	5	4	3	9	10	1	6
Cloudy days	none	none	none	1	1	none	6	1	0	0
Days rain fell	none	3	2	3	2	none	8	3	0	1
Solar halos	0	0	0	0	1	3	0	2	0	0
Lunar halos	0	0	0	0	0	0	0	0	0	0
Number of days maximum temperature above 90°	30	38	12	16	32	34	21	30	35	31
Highest river	18.6	18.0	22.8	15.8	20.5	20.0	22.0	11.0	20.8	18.3
Lowest river	6.4	6.5	9.3	6.7	6.9	6.8	8.6	7.3	8.2	7.4
Range of river	12.2	11.5	13.5	9.1	13.6	13.2	13.4	3.7	12.6	10.9

COMPARATIVE FALL OR AUTUMN WEATHER IN SACRAMENTO, FROM 1877
TO 1887.

The following comparative weather table shows the average barometer, highest, lowest, and range of barometer; average temperature, highest, lowest, and range of temperature; average relative humidity and dew point; total rainfall; prevailing direction, total, and maximum velocity of wind, with the direction at time of maximum velocity; total number of clear, fair, and cloudy days, and number of days rain fell; solar and lunar halos; light and killing frosts; number of days maximum temperature above 90°; number of days minimum temperature was below 32°; and the highest, lowest, and range of water in the river during each fall:

FALL OF:	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer	29.97	29.99	30.00	30.04	30.03	30.02	30.01	30.00	29.93	30.01	29.91
Highest barometer	30.34	30.47	30.41	30.49	30.44	30.45	30.41	30.27	30.27	30.37	30.26
Lowest barometer	29.70	29.68	29.38	29.73	29.61	29.77	29.62	29.62	29.46	29.58	29.60
Range of barometer	0.64	0.79	1.03	0.76	0.83	0.68	0.79	0.65	0.81	0.79	0.66
Average temperature	63.4	62.5	60.9	59.9	58.5	58.8	60.1	60.0	62.8	58.5	63.9
Highest temperature	88.0	92.0	96.0	92.0	96.0	99.6	101.0	93.5	98.5	96.0	100.0
Lowest temperature	37.0	34.0	33.0	27.0	32.0	34.0	29.0	37.7	38.5	32.2	28.0
Range of temperature	51.0	58.0	63.0	65.0	64.0	65.6	72.0	55.8	60.0	63.8	72.0
Average humidity	54.3	54.4	65.2	54.9	58.4	69.6	68.8	69.1	66.3	64.5	54.0
Average dew point					42.4	47.5	48.7	49.0	49.2	45.1	44.9
Prevailing wind	S.	N.	S.	N.	N.	N.W.	S.	N. & S.E.	S.E.	N.W.	N.W.
Total precipitation	1.80	1.35	2.93	0.05	2.73	6.42	2.48	2.61	11.44	0.89	0.47
Total velocity of wind	10.669	11.269	10.492	11.518	12.993	12.213	10.771	10.659	14.214	10.635	11.866
Maximum velocity of wind	28	32	36	28	24	32	25	27	36	36	33
Direction at time of maximum velocity	N.W.	N.	N.	N.	N.	N.W.	N.W.	N.W.	S.E.	N.W.	N.W.
Clear days	76	71	59	71	73	61	67	75	51	78	74
Fair days	6	16	20	14	15	22	18	13	23	12	13
Cloudy days	9	4	12	6	3	8	6	3	17	1	3
Days rain fell	13	7	13	2	12	16	14	9	25	7	7
Solar halos	0	0	2	2	0	1	0	1	2	1	2
Lunar halos	1	0	2	0	0	0	0	4	0	0	0
Number of light frosts	3	6	5	4	11	26	19	17	3	20	5
Number of killing frosts	0	3	4	12	3	0	6	0	0	2	3
Number days maximum temperature above 90°	12	4	10	4	5	8	8	1	15	9	14
Number days minimum temperature below 32°	0	0	0	9	0	0	2	0	0	0	2
Highest river	9.4	8.3	8.6	9.3	9.0	13.1	8.3	10.1	20.6	8.4	7.6
Lowest river	5.2	5.5	5.8	7.4	6.4	6.5	6.5	7.8	7.3	7.4	7.2
Range of river	4.2	2.8	2.8	1.9	2.6	6.6	1.8	2.3	13.3	1.0	0.4

ANNUAL WEATHER SUMMARY IN SACRAMENTO FOR 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, and 1887.

The accompanying table gives the average barometer, the highest, lowest, and range of barometer for each year; the average temperature; highest, lowest, and range of temperature; greatest and least monthly range of temperature; average maximum, minimum, and range of temperature; average relative humidity and dew point; total yearly precipitation; prevailing direction of wind; total and maximum velocity of wind, and direction at time of maximum velocity; annual number of clear, fair, cloudy, and foggy days, and total number of days each year that rain fell; total number of earthquakes, snow storms, and storms with thunder and lightning; total number of solar and lunar halos, light and killing frosts; total number of days the maximum temperature was above 90°, and total number of days the minimum temperature was below 32°; the highest, lowest, and annual range of water in the river for each year:

ANNUAL WEATHER REVIEW FOR:	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887
Average barometer.....	29.95	30.00	30.03	30.03	30.03	30.03	29.99	29.98	29.99	29.98
Highest barometer.....	30.51	30.68	30.49	30.46	30.52	30.74	30.58	30.43	30.51	30.46
Lowest barometer.....	29.46	29.38	29.48	29.61	29.71	29.62	29.42	29.46	29.32	29.45
Range of barometer.....	1.05	1.30	1.01	0.85	0.81	1.12	1.16	0.97	1.19	1.01
Average temperature.....	61.3	60.3	57.2	59.2	58.5	58.8	58.8	61.2	58.8	59.9
Highest temperature.....	100.5	103.0	98.0	98.6	99.8	103.5	100.0	105.0	105.0	100.0
Lowest temperature.....	23.5	25.0	25.0	31.9	27.0	22.0	21.0	34.2	27.5	28.0
Range of temperature.....	77.0	78.0	73.0	66.7	72.8	81.5	79.0	70.8	77.5	72.0
Greatest monthly range of temperature.....	50.0	49.0	49.0	46.7	55.2	55.8	46.0	58.0	52.8	58.7
Least monthly range of temperature.....	21.0	33.7	25.0	27.0	31.6	35.7	30.0	27.0	33.2	35.2
Average maximum temperature.....	81.5	83.7	80.0	81.6	82.0	84.3	70.0	73.2	71.5	72.9
Average minimum temperature.....	41.2	41.2	39.9	42.1	40.1	39.8	49.7	51.8	49.1	47.7
Mean of maximum and minimum temperature.....	61.4	62.4	59.9	61.8	61.0	62.0	59.8	62.5	60.3	60.3
Average range of temperature.....	40.3	42.5	40.1	39.5	41.9	44.5	38.8	40.7	42.6	46.2
Average humidity.....	62.2	65.7	64.6	66.7	66.0	69.0	70.7	67.8	70.1	63.7
Average dew point.....					45.7	47.3	48.5	48.8	47.8	46.0
Prevailing direction of wind.....	S.	S.	S.	S.	S.	S.	S.	S.	S.E.	N.W.
Total precipitation.....	23.45	22.37	31.99	20.71	18.06	13.48	34.92	20.72	18.17	13.43
Total velocity of wind.....	52,830	52,214	62,497	57,846	58,874	52,637	62,611	62,405	56,036	61,322
Maximum velocity of wind.....	40	39	40	32	35	36	36	36	44	40
Direction at time of maximum velocity.....	N.	S.	S.E.	S.E.	N.	N.W.	N.W.	S.E.	S.E.	S.E.
Total number of clear days.....	234	208	237	251	249	263	239	227	262	267
Total number of fair days.....	75	99	59	69	76	76	68	88	76	74
Total number of cloudy days.....	36	58	70	45	40	26	59	50	27	24
Total number of foggy days.....	0	4	5	8	1	11	0	0	4	0
Total number of days of precipitation.....	66	79	70	67	70	54	76	62	57	56
Number of earthquakes.....	2	0	0	1	0	0	0	2	1	1
Snow storms.....	0	1	1	0	3	2	0	0	0	0
Thunder and lightning.....	4	4	3	4	4	2	2	6	3	2
Number of solar halos.....	1	3	6	2	5	8	9	4	8	8
Number of lunar halos.....	0	2	4	2	3	0	9	1	2	0
Number of light frosts.....	18	17	14	24	69	33	31	24	30	18
Number of killing frosts.....	22	27	32	4	12	40	22	0	10	26
Number of days maximum temperature was above 90°.....	35	48	16	18	43	45	22	49	45	48
Number of days minimum temperature was below 32°.....	15	14	17	1	5	27	13	0	4	9
Highest water in the river.....	26.0	23.4	24.5	26.5	21.3	20.7	24.6	23.9	25.6	20.5
Lowest water in the river.....	5.3	5.6	7.4	6.4	6.5	6.5	7.5	7.3	7.5	7.2
Range of water in the river.....	20.7	17.8	17.1	20.1	14.8	14.2	17.1	16.6	18.1	13.3

MONTHLY WEATHER SUMMARY AT SACRAMENTO FOR 1887.

January—Average temperature, 48.5° , being 15° above the normal temperature for thirty-four years. Rainfall, 1.12 inches, 2.55 inches below the normal precipitation for thirty-eight years. There were 3 light frosts, and 7 heavy ones. The number of days minimum temperature below 32° , 3. Highest and lowest river, 13.2 and 9 feet. Highest and lowest temperature, 65° and 30° . Highest velocity of wind, 26 miles per hour, from the northwest. There were 21 clear, 7 fair, and 3 cloudy days, and 6 upon which rain fell.

February—Average temperature, 44.7° , being 6.3° below the normal of thirty-four years. This was the lowest average temperature for this month ever before recorded. Rainfall, 6.28 inches—3.39 inches in excess of the normal precipitation. There were 4 light and 6 heavy frosts and thin ice. Number of days minimum temperature below 32° , 1. Highest and lowest river, 18.6 and 10.3 feet. Highest and lowest temperature, 67° and 30° . Highest wind velocity, 33 miles per hour, from the northwest. There were 8 clear, 11 fair, and 9 cloudy days, and 14 days upon which rain fell.

March—Average temperature, 57.8° , being 2.8° below the normal of many years. Rainfall, .94 of an inch, 1.97 inches below the normal precipitation. No frosts. Highest and lowest river, 20.5 and 15.5 feet. Highest and lowest temperature, 79° and 41° . Solar halos, 2. Clear days, 21; fair, 8; and cloudy, 2. Days upon which rain fell, 6. Highest wind velocity, 24 miles, from the northwest.

April—Average temperature, 58.3° , being 0.9° below the normal. Rainfall, 2.53 inches, .60 of an inch above the normal precipitation. Light frosts, 1. Highest and lowest river, 20.5 and 19.3 feet. Highest and lowest temperature, 84° and 41° . Clear days, 20; fair, 7; cloudy, 3. Days upon which rain fell, 10. Highest wind velocity, 30 miles per hour, from the northwest and southeast.

May—Average temperature, 62.9° , being 1.3° below the normal. Rainfall was but a sprinkle, being .70 of an inch below the normal precipitation. Light frosts, 2. Highest and lowest river, 20.5 and 18 feet. Highest and lowest temperature, 98° and 39° . Light frosts, 2. Solar halos, 3. Clear days, 21; fair, 9; cloudy, 1. Days upon which rain fell, 1. Number of days maximum temperature above 90° , 3. Highest wind velocity, 29 miles per hour, from the northwest.

June—Average temperature, 69.1° ; being 1.2° below the normal. Rainfall, nothing, being .12 of an inch less than the normal precipitation. Highest and lowest river, 18.3 and 10.7 feet. Highest and lowest temperature, 100° and 47° . Number of days maximum temperature above 90° , 8. Solar halos, 7; clear days, 24; fair, 6; cloudy, none; and no days on which rain fell. Highest wind velocity, 30 miles per hour, from the southwest.

July—Average temperature, 70.2° ; being 2.9° below the normal. Rainfall, none; being .03 of an inch less than the normal precipitation. Highest and lowest river, 11.0 and 8.1 feet. Highest and lowest temperature, 99° and 48° . Number of days maximum temperature above 90° , 13. Clear days, 31; no fair and no cloudy days, and no days upon which rain fell. Highest wind velocity, 24 miles per hour, from the south and southwest.

August—Average temperature, 69.1° , being 2.6° below the normal. Rainfall, a sprinkle, being about equal to the normal precipitation. Highest and lowest river, 8.1 and 7.4 feet. Highest and lowest temperature, 100° and 48° . Number of days maximum temperature above 90° , 10.

Clear days, 31. No fair and no cloudy days, and no days upon which rain fell. Highest wind velocity, 24 miles per hour, from the south.

September—Average temperature, 70.4° , being 1.8° above the normal. Rainfall, .02 of an inch, being .09 of an inch below the normal precipitation. No frosts. Highest and lowest river, 7.3 and 7.2 feet. Highest and lowest temperature, 100° and 46° . Thunder storms, 1. Solar halos, 2. Clear days, 23; fair, 7; cloudy days, none; days upon which rain fell, 3. Days maximum temperature above 90° , 10. Highest velocity of the wind, 24 miles per hour, from the northwest and southwest.

October—Average temperature, 66.5° , being 4.2° above the normal. Rainfall, none, being .70 of an inch below the normal precipitation. Highest and lowest river, 7.2 and 7.2 feet, that is, there was no change in the river during October, at the hour of observation, 11 A. M. each day. Highest and lowest temperature, 92° and 42° . Number of days maximum temperature above 90° , 4; clear days, 28; fair, 3; cloudy, none; and no days upon which rain fell. Highest hourly velocity of wind was 33 miles, from the northwest.

November—Average temperature, 54.7° ; being 1.5° above the normal. Rainfall, .45 of an inch, being 1.06 inches below the normal precipitation. Highest and lowest river, 7.6 and 7.2 feet. Highest and lowest temperature, 75° and 28° . Thunder storm, 1; light frosts, 5; heavy frosts, 3; clear days, 24; fair, 3; cloudy, 3; days upon which rain fell, 4. Number of days the minimum temperature was below 32° , 2; highest velocity of wind, 27 miles per hour, from the northwest.

December—The average temperature was 46.7° , being 0.5° less than the normal, as deduced from a record of thirty-four years. Rainfall, 2.09 inches, being 2.33 inches less than the average precipitation, as obtained from a record of thirty-nine years. The highest and lowest temperature was 65° and 29° . The highest and lowest river, 10.8 and 7.5 feet. There were 3 light and 10 heavy frosts; winds obtaining a velocity of 25 miles or more per hour, occurred as follows: On the first, 40 miles, from the southeast; thirteenth, 30 miles, from the northwest; fourteenth, 27 miles, from the northwest; twentieth, 27 miles from the north; twenty-eighth, 36 miles from the south.

The year 1887, in its meteorological features, as reviewed from the above data, shows the annual mean temperature to have been about equal to the normal, as deduced from a record of thirty-four years. As compared with Signal Service data from the beginning of observations, July, 1877, we find this year has more clear days (267) than has ever before been recorded. The greatest number before, was 263 days, in 1883, and the least number 208 days, in 1879. For the first time since 1863, the prevailing direction of the wind was from the northwest. There has been but six years out of thirty-five when this has occurred, being 1853, 1854, 1855, 1862, 1863, and the present year, 1887. All other times from the south or southeast.

RAINFALL FROM SEPTEMBER, 1849, TO MARCH 1, 1888.

The following table of rainfall at Sacramento, from September, 1849, to March 1, 1888, was collected from the records of Dr. T. M. Logan, Dr. F. W. Hatch, and those of the United States Signal Service:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Inches
1849									.25	1.50	2.25	12.50		1849-50	36.00
1850	4.50	.50	10.00	4.25	.25	none	none	none	none	none	sprin.	sprin.	19.50	1850-51	4.71
1851	.65	.35	1.88	1.14	.69	none	none	none	1.00	.18	2.14	7.07	15.10	1851-52	17.98
1852	.58	.12	6.40	.19	.30	none	none	none	sprin.	none	6.00	13.41	27.00	1852-53	36.36
1853	3.00	2.00	7.00	3.50	1.45	sprin.	sprin.	none	sprin.	sprin.	1.50	1.54	19.99	1853-54	20.06
1854	3.25	8.50	3.25	1.50	.21	.31	none	sprin.	sprin.	1.01	.65	1.15	19.83	1854-55	18.62
1855	2.67	3.46	4.20	4.32	1.15	.01	none	none	sprin.	none	.75	2.00	18.56	1855-56	13.76
1856	4.92	.69	1.40	2.13	1.84	.03	none	none	sprin.	.20	.65	2.40	14.26	1856-57	10.46
1857	1.38	4.80	.68	sprin.	sprin.	.35	none	sprin.	none	.66	2.41	2.63	12.91	1857-58	15.00
1858	2.44	2.46	2.88	1.21	.20	.10	.01	sprin.	sprin.	3.01	.15	4.34	16.80	1858-59	16.03
1859	.96	3.91	1.64	.98	1.04	none	none	none	.02	none	6.48	1.83	16.86	1859-60	22.09
1860	2.31	.93	5.11	2.87	2.49	.02	.63	none	.06	.91	.18	4.28	19.19	1860-61	16.10
1861	2.67	2.92	3.32	.48	.59	.14	.55	none	none	sprin.	2.17	8.64	21.38	1861-62	35.56
1862	15.04	4.26	2.80	.82	1.81	.01	none	.01	none	.36	sprin.	2.33	27.44	1862-63	11.58
1863	1.73	2.75	2.36	1.69	.36	none	none	none	sprin.	none	1.49	1.82	12.20	1863-64	7.87
1864	1.08	.19	1.30	1.08	.74	.09	none	.08	sprin.	.12	6.72	7.87	19.27	1864-65	22.51
1865	4.78	.71	.48	1.37	.46	none	sprin.	none	.08	.48	2.43	.36	11.15	1865-66	17.93
1866	7.70	2.01	2.02	.48	2.25	.10	.02	none	none	sprin.	2.43	9.51	26.52	1866-67	25.30
1867	3.44	7.10	1.01	1.80	.01	none	none	none	.01	none	3.81	12.85	30.03	1867-68	32.79
1868	6.04	3.15	4.35	2.31	.27	sprin.	none	none	none	none	.77	2.61	19.50	1868-69	16.64
1869	4.79	3.63	2.94	1.24	.65	.01	none	none	sprin.	2.12	.85	1.96	18.19	1869-70	13.57
1870	1.37	3.24	1.64	2.12	.27	sprin.	sprin.	sprin.	none	.02	.58	.97	10.21	1870-71	8.47
1871	2.08	1.92	.69	1.45	.76	sprin.	none	none	sprin.	.21	1.22	10.59	18.92	1871-72	23.65
1872	4.04	4.74	1.94	.61	.28	.02	none	none	sprin.	.22	1.93	5.39	19.17	1872-73	14.21
1873	1.23	4.36	.55	.51	none	sprin.	.02	sprin.	none	.31	1.21	10.01	18.20	1873-74	22.90
1874	5.20	1.86	3.05	.89	.37	sprin.	sprin.	none	.05	2.26	3.80	.44	17.92	1874-75	17.70
1875	8.70	.55	.80	sprin.	sprin.	1.10	none	none	none	.44	6.20	5.52	23.31	1875-76	26.53
1876	4.99	3.75	4.15	1.10	.15	none	.21	.02	sprin.	3.45	.30	none	18.12	1876-77	8.96
1877	2.77	1.04	.56	.19	.64	.01	sprin.	sprin.	none	.73	1.07	1.43	8.44	1877-78	24.86
1878	9.26	8.04	3.09	1.07	.17	none	none	none	.29	.55	.51	.47	23.45	1878-79	17.85
1879	3.18	3.88	4.88	2.66	1.30	.13	sprin.	sprin.	none	.88	2.05	3.41	22.37	1879-80	26.47
1880	1.64	1.83	1.70	14.20	.76	none	sprin.	none	none	none	.05	11.81	31.99	1880-81	26.57
1881	6.14	5.06	1.37	1.64	sprin.	.50	sprin.	none	.30	.55	1.88	3.27	20.71	1881-82	16.51
1882	1.89	2.40	3.78	1.99	.35	.10	sprin.	none	.37	2.63	3.22	1.13	18.06	1882-83	18.11
1883	2.23	1.11	3.70	.67	2.85	none	none	none	.90	.96	.61	.44	13.48	1883-84	24.78
1884	3.43	4.46	8.14	4.32	.06	1.45	none	sprin.	.60	2.01	none	10.45	34.92	1884-85	16.58
1885	2.16	.49	.08	.68	sprin.	.11	sprin.	none	.08	.02	11.34	5.76	20.72	1885-86	32.27
1886	7.95	.29	2.68	4.08	.07	none	none	none	none	.68	.21	2.21	18.17	1886-87	13.97
1887	1.12	6.28	.94	2.53	sprin.	none	none	sprin.	.02	none	.45	2.09	13.43	1887-88	*7.94
1888	4.81	.57													
Totals	148.12	110.31	108.76	74.07	25.79	4.59	1.14	.11	4.23	26.48	80.46	176.49	738.67		752.32
Averages	3.798	2.828	2.809	1.949	.678	.121	.030	.003	.108	.690	2.063	4.525	19.439		19.80

* Up to March 1, 1888.

FOLSOM, SACRAMENTO COUNTY.

The rainfall data tabulated below is from Folsom, Sacramento County, and was furnished by J. H. Sturges, special River Observer of the United States Signal Service at that point. The rainfall is from September, 1871, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1871									spring.	.55	1.95	13.12		1871-72	28.82
1872	5.50	4.72	1.60	.63	.75	spring.	none	spring.	spring.	.25	2.80	6.53	22.78	1872-73	15.69
1873	1.64	4.05	.34	.05	.03	none	.01	spring.	spring.	spring.	1.39	10.51	18.02	1873-74	24.46
1874	5.26	2.63	1.82	2.03	.81	spring.	spring.	none	spring.	1.66	5.19	.13	19.53	1874-75	15.70
1875	6.14	.04	1.24	spring.	.07	1.23	none	none	none	.26	7.12	4.49	20.59	1875-76	30.24
1876	5.89	4.06	6.62	1.56	.24	spring.	.26	.03	none	3.76	.25	none	22.67	1876-77	10.19
1877	3.38	.68	.81	spring.	1.02	spring.	spring.	spring.	none	.75	.54	1.34	8.52	1877-78	25.00
1878	8.41	8.37	4.23	1.10	.26	none	none	spring.	.12	.43	.62	.56	24.10	1878-79	21.91
1879	4.87	4.94	5.43	3.38	1.44	.12	none	spring.	none	1.21	2.20	3.19	26.78	1879-80	25.09
1880	1.51	2.13	1.40	11.39	2.06	none	spring.	none	none	spring.	.10	9.85	28.44	1880-81	25.91
1881	6.70	6.07	1.38	1.13	spring.	.68	none	none	.40	1.21	1.57	3.45	22.59	1881-82	18.68
1882	2.38	3.01	3.82	2.51	.27	.06	spring.	none	.68	2.81	3.95	.74	20.23	1882-83	22.22
1883	2.11	.80	5.46	1.10	4.57	none	none	none	1.82	1.41	.81	.92	19.00	1883-84	31.02
1884	3.88	5.92	8.14	5.32	1.16	1.64	none	spring.	.64	2.02	none	6.13	37.85	1884-85	16.58
1885	1.91	.84	.15	1.68	spring.	.21	.02	spring.	.21	spring.	10.91	4.88	20.81	1885-86	34.75
1886	7.60	.90	3.16	6.78	.29	none	none	none	none	1.34	.55	3.35	23.97	1886-87	20.11
1887	1.27	9.21	1.30	2.84	.03	.22	none	spring.	.38	none	.59	4.82	20.66	1887-88	*12.46
1888	5.83	.84													
Totals	74.28	59.21	46.90	41.50	13.00	4.16	.29	.03	3.87	17.66	40.54	77.01	356.54		366.37
Averages	4.369	3.483	2.931	2.594	.812	.260	.018	.002	.250	1.039	2.385	4.530	22.284		22.898

*Up to March 1, 1888.

HIGHEST HOURLY WIND VELOCITY, AND DIRECTION AT TIME OF HIGHEST VELOCITY, AT SACRAMENTO.

The following table gives the highest velocity of wind, along with the direction at the time of highest velocity, for each month from January to December, inclusive, from July, 1877, the date on which this station was opened, to date:

	1877.		1878.		1879.		1880.		1881.		1882.	
	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.
January.....	-----	-----	28	S.E.	33	N.	34	S.E.	32	S.E.	32	N.
February.....	-----	-----	36	S.E.	33	N.	32	S.E.	22	S.W.	27	N. & S.E.
March.....	-----	-----	24	N.	22	S.W.	36	N.	28	N.	28	S.E. & N.
April.....	-----	-----	32	N.W.	32	N.	34	S.	22	S.	35	N.
May.....	-----	-----	40	N.	32	N.	32	N.W.	25	N.	25	N.W.
June.....	-----	-----	20	N.W.	26	N.	22	S.	22	S.W.	23	S.
July.....	20	S.	15	S.	15	S.W.	18	S.	20	N.W.	28	N.W.
August.....	20	S.	13	S.	14	S. & N.	20	S.	19	S.W.	16	S.
September....	20	N.W.	24	N.	22	N.W.	16	N.	22	N.W.	27	N.W.
October.....	28	N. & N.W.	28	N.	16	N.W.	18	S.W. & N.W.	19	S.W. & N.	28	S.E.
November....	23	N.	32	N.	36	N.	28	N.	24	N.	32	N.W.
December....	16	S.	30	N.	39	S.	40	S.E.	24	S.E.	19	W. & S.E. & S.W.
Highest velocity dur'g each year. }	28 in Oct.	N. & N.W.	40 in May.	N.	39 in Dec.	S.	40 in Dec.	S.E.	32 in Jan.	S.E.	35 in Apr.	N.
	1883.		1884.		1885.		1886.		1887.		1888.	
	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.	Max. Vel., Miles.	Direction.
January.....	36	N.W.	30	S.E.	18	S.E.	44	S.E.	26	N.W.	36	N.
February.....	23	N.W.	33	S.	31	N.W.	32	N.W.	33	N.W.	36	N.W.
March.....	26	S.E.	35	S.	24	N.W. & S.W.	37	N.W.	24	N.W.	48	N.W.
April.....	34	N.W.	27	S.E.	23	S.	36	N.W.	30	N.W. & S.E.	-----	-----
May.....	28	N.W.	26	S.W.	30	N.W.	27	N.W.	29	N.W.	-----	-----
June.....	31	N.W.	22	S.W.	24	S.W.	42	N.W.	30	S.W.	-----	-----
July.....	17	S.W.	24	S.W.	25	S.	20	S.W.	24	S. & S.W.	-----	-----
August.....	18	N.W.	18	S.W.	18	S.W.	18	S.W.	24	S.	-----	-----
September....	16	S.W. & S.	27	N.W.	20	N.W.	26	N.W.	24	N.W. & S.W.	-----	-----
October.....	21	S.E.	20	S.W.	18	S.W.	17	N.W.	33	N.W.	-----	-----
November....	25	N.W.	22	S.E.	36	S.E.	36	N.W.	27	N.W.	-----	-----
December....	16	W.	36	N.W.	25	N.W.	25	S.E.	40	S.E.	-----	-----
Highest velocity dur'g each year. }	36 in Jan.	N.W.	36 in Dec.	N.W.	36 in Nov.	S.E.	44 in Jan.	S.E.	40 in Dec.	S.E.	-----	-----

MEAN AVERAGE WINTER TEMPERATURE IN SACRAMENTO.

The tabulated statement below shows the average temperature for the winter months, and for the season also. The winter seasons, beginning with the season of 1853-4, and ending with the one of 1887-8; giving a mean average for the thirty-five years. Judging from the average temperature for each season, we must conclude that the season of 1879-80 was the coldest, 44.5°; and the warmest that of 1865-6, 51.4°: the mean average of the thirty-five years being 48.3°.

WINTER SEASON OF—	Mean Temp.— December.	Mean Temp.— January.	Mean Temp.— February.	Mean Winter Temperature.
1853-54.....	48.0	43.0	51.0	47.3
1854-55.....	47.9	43.7	52.5	48.0
1855-56.....	46.0	48.0	52.6	48.9
1856-57.....	43.9	48.5	50.2	47.5
1857-58.....	47.4	45.0	52.2	48.2
1858-59.....	44.5	44.9	50.5	46.6
1859-60.....	43.5	46.2	49.8	46.5
1860-61.....	49.3	47.1	52.2	49.5
1861-62.....	50.9	46.4	47.5	48.3
1862-63.....	46.4	46.9	48.0	47.1
1863-64.....	46.5	49.2	53.6	49.8
1864-65.....	50.2	47.4	49.0	48.9
1865-66.....	44.1	46.5	63.5	51.4
1866-67.....	50.2	48.2	47.8	48.7
1867-68.....	46.8	47.0	50.5	48.1
1868-69.....	47.0	47.6	49.9	48.2
1869-70.....	46.5	48.6	51.1	48.7
1870-71.....	45.5	48.3	49.4	47.7
1871-72.....	48.7	48.5	53.3	50.2
1872-73.....	49.0	52.7	48.2	50.0
1873-74.....	47.7	45.7	49.3	47.6
1874-75.....	45.0	46.9	52.7	48.2
1875-76.....	48.0	48.8	50.2	49.0
1876-77.....	45.5	49.1	55.0	49.9
1877-78.....	48.6	49.7	51.3	49.9
1878-79.....	47.2	45.5	55.0	49.2
1879-80.....	44.0	43.5	46.0	44.5
1880-81.....	50.3	49.2	53.5	51.0
1881-82.....	46.2	45.1	46.3	45.9
1882-83.....	48.2	41.9	46.0	45.4
1883-84.....	44.2	46.6	46.9	45.9
1884-85.....	48.8	47.1	54.0	50.0
1885-86.....	49.1	45.7	53.3	49.4
1886-87.....	49.2	48.5	44.7	47.5
1887-88.....	46.9	42.8	52.6	47.4
Totals.....	1651.2	1639.8	1779.6	1690.4
Averages for 35 years.....	47.2	46.9	50.8	48.3

MEAN AVERAGE SPRING TEMPERATURE IN SACRAMENTO.

The table below will be found to contain the average temperature for the spring months, also for the season. The warmest one, as indicated by its average temperature, was 1853, 62.9°; the coldest, 1880, 55.0°; the mean average spring temperature being 59.5°:

SPRING SEASON OF—	Mean Temp.— March.	Mean Temp.— April.	Mean Temp.— May.	Mean Spring Temperature.
1853.....	59.8	61.0	68.0	62.9
1854.....	53.0	60.0	62.0	58.3
1855.....	54.8	58.1	60.2	57.7
1856.....	57.0	58.8	63.9	59.9
1857.....	56.4	63.3	65.5	61.7
1858.....	53.7	59.8	65.2	59.6
1859.....	51.5	57.1	63.0	57.2
1860.....	53.3	57.8	58.5	56.5
1861.....	55.0	60.6	63.7	59.8
1862.....	53.6	28.0	61.2	57.6
1863.....	57.6	59.5	67.1	61.4
1864.....	56.1	62.1	68.5	62.2
1865.....	53.6	59.3	70.2	61.0
1866.....	54.2	61.9	63.1	59.7
1867.....	50.7	59.7	64.4	58.3
1868.....	55.0	60.1	64.2	59.8
1869.....	53.6	59.0	64.2	58.9
1870.....	53.0	57.0	61.0	57.0
1871.....	56.0	59.2	61.5	58.9
1872.....	56.8	57.6	67.0	60.5
1873.....	56.8	60.0	67.9	61.6
1874.....	52.9	59.5	64.7	59.0
1875.....	58.7	63.0	68.1	63.3
1876.....	54.6	59.5	65.7	59.9
1877.....	59.0	60.2	64.5	61.2
1878.....	56.7	59.4	65.5	60.5
1879.....	57.4	60.3	60.2	59.3
1880.....	48.8	54.6	61.6	55.0
1881.....	55.5	60.9	64.8	60.4
1882.....	53.0	55.8	64.0	57.6
1883.....	56.9	56.0	62.6	58.5
1884.....	52.9	56.7	64.0	57.9
1885.....	59.1	60.6	65.7	61.8
1886.....	52.1	55.5	62.0	56.5
1887.....	57.8	58.3	62.9	59.7
Totals	1926.9	2070.2	2246.6	2081.1
Averages for 35 years.....	55.1	59.1	64.2	59.5

MEAN AVERAGE SUMMER TEMPERATURE IN SACRAMENTO.

The average temperature in the following table is for the summer months and for the summer season, showing by their average temperature that 1866 was the warmest, 74.8°; and the coldest to have been 1881, 68.5°; the mean average for thirty-five years is 71.6°; the season of 1866 being 3.2° above the mean average, and 1881 3.1° below the mean average for the past thirty-five years:

SUMMER SEASON OF—	Mean Temp.— June.	Mean Temp.— July.	Mean Temp.— August.	Mean Summer Temperature.
1853.....	77.0	75.0	71.0	74.3
1854.....	67.0	80.6	69.5	72.4
1855.....	71.1	72.5	73.0	72.2
1856.....	71.1	75.1	69.6	71.9
1857.....	71.9	71.1	71.3	71.5
1858.....	69.4	70.8	70.6	70.3
1859.....	74.8	69.1	67.2	70.4
1860.....	65.6	73.2	73.5	70.8
1861.....	66.2	73.6	69.7	69.8
1862.....	69.3	73.2	75.0	72.5
1863.....	69.1	75.6	70.7	71.8
1864.....	71.1	74.8	74.7	73.5
1865.....	73.5	71.0	71.7	73.1
1866.....	72.2	76.2	76.0	74.8
1867.....	70.3	73.7	71.7	71.9
1868.....	69.5	73.8	71.2	71.5
1869.....	70.8	74.3	71.3	72.1
1870.....	69.3	71.8	72.6	71.2
1871.....	70.1	70.2	72.0	70.8
1872.....	69.2	71.4	73.1	71.6
1873.....	71.7	73.2	66.3	70.4
1874.....	70.2	72.8	70.9	71.3
1875.....	70.6	73.3	72.5	72.1
1876.....	76.9	74.0	72.8	74.6
1877.....	72.5	75.0	72.9	73.5
1878.....	71.8	73.4	73.4	72.9
1879.....	72.1	71.8	74.7	72.9
1880.....	66.6	70.9	69.7	69.1
1881.....	66.2	71.1	68.2	68.5
1882.....	68.1	73.4	71.9	71.1
1883.....	72.6	73.1	71.4	72.4
1884.....	65.8	71.2	72.5	69.8
1885.....	66.2	71.0	73.0	70.1
1886.....	69.0	72.0	71.6	70.9
1887.....	69.1	70.2	69.1	69.5
Totals	2457.9	2556.7	2506.3	2507.0
Averages for 35 years	70.2	73.0	71.6	71.6

MEAN AVERAGE AUTUMN TEMPERATURE IN SACRAMENTO.

The average temperature for the fall season indicates the fall of 1853 as being the warmest, 69.0°; that of 1881 and 1886 were the coldest, judging from the average temperature, 58.5°. The average mean temperature for thirty-five years past was 61.6°, showing the average of 1853 to have been 7.4° above the mean average, and that of 1881 and 1886 to have been 3.1° below the mean average temperature for the past thirty-five years:

FALL SEASON OF—	Mean Temp.— September.	Mean Temp.— October.	Mean Temp.— November.	Mean Autumn Temperature.
1853.....	76.0	78.0	53.0	69.0
1854.....	65.0	60.0	55.0	60.0
1855.....	68.0	63.0	50.6	60.5
1856.....	70.9	58.0	52.2	60.4
1857.....	67.9	61.5	53.2	60.9
1858.....	68.9	59.5	54.2	60.9
1859.....	65.9	63.3	54.0	61.1
1860.....	67.6	59.8	53.5	60.3
1861.....	67.8	59.9	53.6	60.4
1862.....	70.4	67.6	53.1	63.7
1863.....	69.0	62.8	52.7	61.5
1864.....	69.8	64.5	53.5	62.6
1865.....	68.8	63.1	56.9	62.9
1866.....	72.2	65.2	53.8	63.7
1867.....	68.8	62.7	54.8	62.1
1868.....	68.3	62.0	53.9	61.4
1869.....	69.9	63.1	54.0	62.3
1870.....	68.0	63.6	53.4	61.7
1871.....	67.4	62.2	50.2	59.9
1872.....	68.8	58.9	51.2	59.6
1873.....	69.9	61.4	57.5	62.9
1874.....	70.7	61.7	53.9	62.1
1875.....	65.7	69.9	56.7	64.1
1876.....	70.1	63.5	53.3	62.3
1877.....	72.8	62.9	54.7	63.5
1878.....	69.0	62.9	55.5	62.5
1879.....	70.5	61.5	50.9	61.0
1880.....	68.0	62.1	49.7	59.9
1881.....	67.8	56.8	50.8	58.5
1882.....	68.4	58.4	49.5	58.8
1883.....	71.6	58.2	50.5	60.1
1884.....	64.8	59.9	55.3	60.0
1885.....	69.8	64.3	54.4	62.8
1886.....	67.9	57.1	50.4	58.5
1887.....	70.4	66.5	54.7	63.9
Totals.....	2416.8	2185.8	1864.6	2155.8
Averages for 35 years.....	69.1	62.5	53.3	61.6

AVERAGE ANNUAL AND SEASONAL TEMPERATURE IN SACRAMENTO.

The statement below shows the average temperature, for each year, for thirty-five years; also the spring, summer, autumn, and winter temperature for thirty-five years. The coldest year, inferring from the average temperature, was that of 1880, 57.2° ; the warmest was 1864, 62.8° ; the mean average for the past thirty-five years, 60.2° , showing the coldest to have been 3° below the mean average, while the warmest year was that of 1864, when it was 2.6° above the mean average for thirty-five years. By careful study of the table, there will be noticed but a slight difference between the coldest and the warmest year, as compared with a thirty-five years' average, generally not more than 3° . Therefore, we might safely say that the average temperature of any year is not likely to vary more than 3° from 60° either way, between the hottest and coldest year, as compared with the mean average temperature for the past thirty-five years:

YEAR.	Mean Annual Temperature.	Mean Spring Temperature.	Mean Summer Temperature.	Mean Autumn Temperature.	Mean Winter Temperature.	
1853.....	62.6	62.9	74.3	69.0	1853-54.....	47.3
1854.....	59.5	58.3	72.4	60.0	1854-55.....	48.0
1855.....	59.5	57.7	72.2	60.5	1855-56.....	48.9
1856.....	60.1	59.9	71.9	60.4	1856-57.....	47.5
1857.....	60.7	61.7	71.5	60.9	1857-58.....	48.2
1858.....	59.5	59.6	70.3	60.9	1858-59.....	46.6
1859.....	58.7	57.2	70.4	61.1	1859-60.....	46.5
1860.....	59.0	56.5	70.8	60.3	1860-61.....	49.5
1861.....	60.1	59.8	69.8	60.4	1861-62.....	48.3
1862.....	62.2	57.6	72.5	63.7	1862-63.....	47.1
1863.....	60.3	61.4	71.8	61.5	1863-64.....	49.8
1864.....	62.8	62.2	73.5	62.6	1864-65.....	48.9
1865.....	61.0	61.0	73.1	62.9	1865-66.....	51.4
1866.....	62.1	59.7	74.8	63.7	1866-67.....	48.7
1867.....	59.9	58.3	71.9	62.1	1867-68.....	48.1
1868.....	60.1	59.8	71.5	61.4	1868-69.....	48.2
1869.....	60.4	58.9	72.1	62.3	1869-70.....	48.7
1870.....	59.6	57.0	71.2	61.7	1870-71.....	47.7
1871.....	59.6	58.9	70.8	59.9	1871-72.....	50.2
1872.....	60.4	60.5	71.6	59.6	1872-73.....	50.0
1873.....	60.7	61.6	70.4	62.9	1873-74.....	47.6
1874.....	59.8	59.0	71.3	62.1	1874-75.....	48.2
1875.....	62.5	63.3	72.1	64.1	1875-76.....	49.0
1876.....	61.7	59.9	74.6	62.3	1876-77.....	49.9
1877.....	61.2	61.2	73.5	63.4	1877-78.....	49.9
1878.....	61.3	60.5	72.9	62.5	1878-79.....	49.2
1879.....	60.3	59.3	72.9	60.9	1879-80.....	44.5
1880.....	57.2	55.0	69.1	59.9	1880-81.....	51.0
1881.....	59.2	60.4	68.5	58.5	1881-82.....	45.9
1882.....	58.5	57.6	71.1	58.8	1882-83.....	45.4
1883.....	58.8	58.5	72.4	60.1	1883-84.....	45.9
1884.....	58.8	57.9	69.8	60.0	1884-85.....	50.0
1885.....	61.2	61.8	70.1	62.8	1885-86.....	49.4
1886.....	58.8	56.5	70.9	58.5	1886-87.....	47.5
1887.....	59.9	59.7	69.5	63.9	1887-88.....	47.4
Totals	2106.0	2081.1	2507.0	2155.8	.....	1690.4
Averages for 35 years	60.2	59.5	71.6	61.6	.....	48.3

RAINFALL FOR SPRING, SUMMER, AUTUMN, WINTER, AND TOTAL FOR EACH YEAR, AT SACRAMENTO.

The following table gives the rainfall for each season of spring, summer, autumn, and winter; also the total rainfall for each year and for each season. The table shows the annual rainfall for each year, beginning with the year 1850, and the total for each season, beginning with that of 1849-50. The rainfall for the winter seasons begins with the winter of 1849-50, and ends with the winter of 1886-87, making a total of thirty-eight winters:

YEAR.	Rainfall for Spring.	Rainfall for Summer.	Rainfall for Autumn.	Rainfall for Winter.	Annual Rainfall.	Season of.	Inches.
1849			4.00		*16.50	1849-50	36.00
1850	14.50	none	sprinkle	17.80	19.50	1850-51	4.71
1851	3.71	none		3.32	1.00	1851-52	17.98
1852	6.89	none		6.00	7.77	1852-53	36.36
1853	11.95	sprinkle	1.50	18.41	19.99	1853-54	20.06
1854	4.96	.31	1.66	13.29	19.83	1854-55	18.62
1855	9.67	.01	.75	7.28	18.56	1855-56	13.76
1856	5.37	.03	.85	7.61	14.26	1856-57	10.46
1857	.68	.35	3.06	8.58	12.91	1857-58	14.99
1858	4.29	.11	3.16	7.53	16.80	1858-59	16.04
1859	3.66	none	6.50	9.21	16.86	1859-60	22.06
1860	10.47	.05	1.15	5.07	19.19	1860-61	16.18
1861	4.39	.69	2.17	9.87	21.38	1861-62	36.10
1862	5.43	.02	.36	27.94	27.44	1862-63	11.59
1863	4.41	none	1.49	6.81	12.20	1863-64	7.79
1864	3.12	.17	6.84	3.09	19.27	1864-65	22.59
1865	2.31	sprinkle	2.99	13.36	11.15	1865-66	17.91
1866	4.75	.12	2.43	10.07	26.52	1866-67	25.32
1867	2.82	none	3.82	20.05	30.03	1867-68	32.79
1868	6.93	sprinkle	.77	22.04	19.50	1868-69	16.64
1869	4.83	.01	2.97	11.03	18.19	1869-70	13.57
1870	4.03	sprinkle	.60	6.57	10.21	1870-71	8.47
1871	2.90	sprinkle	1.43	4.97	19.32	1871-72	24.05
1872	2.83	.02	2.15	19.47	19.17	1872-73	14.19
1873	1.06	.02	1.52	11.08	18.20	1873-74	22.92
1874	4.31	sprinkle	6.11	17.07	17.92	1874-75	17.70
1875	.80	1.10	6.64	9.69	23.31	1875-76	26.31
1876	5.40	.23	3.75	14.26	18.12	1876-77	9.19
1877	1.39	.01	1.80	3.81	8.44	1877-78	24.86
1878	4.33	none	1.35	18.73	23.45	1878-79	17.85
1879	8.84	.13	2.93	7.53	22.37	1879-80	26.47
1880	16.66	sprinkle	.05	6.88	31.99	1880-81	26.57
1881	3.01	.50	2.73	23.01	20.71	1881-82	16.51
1882	6.12	.10	6.42	7.56	18.06	1882-83	18.11
1883	7.22	none	2.48	4.47	13.48	1883-84	24.78
1884	12.52	1.45	2.61	8.33	34.92	1884-85	16.58
1885	.76	.11	11.44	13.10	20.72	1885-86	32.27
1886	6.83	none	.89	14.00	18.17	1886-87	13.97
1887	3.52	sprinkle	.47	9.61	13.43	1887-88	† 7.94
1888				7.47			
Totals	207.67	5.54	111.16	435.12	738.67		752.32
Average	5.465	.146	2.850	11.157	19.439		19.780

*Rainfall for September, October, November, and December, 1849. † Up to March 1, 1888.

HIGHEST, LOWEST, AND AVERAGE TEMPERATURE, WITH PREVAILING WIND, AT SACRAMENTO.

The following table shows the highest, lowest, and average yearly temperature, along with the prevailing direction of wind, for each year. This data is from the records of Dr. Thomas M. Logan, the Railroad Company, Mr. Samuel H. Gerrish, and the records of the United States Signal Office. The records cover a period of thirty-five years. It shows that a very low temperature is never recorded at this point. Often several years will intervene without the temperature falling to the freezing point. The lowest recorded temperature is 19°, in January, 1854, and January, 1888: the highest, 106°, in 1870. The prevailing direction of wind for the year is usually from the south:

YEAR.	Highest Tem- perature.	Lowest Tem- perature.	Average Annual Tem- perature.	Prevailing Di- rection of Wind for Each Year.
1853.....	97	32	62.6	N.W.
1854.....	102	19	59.5	N.W.
1855.....	100	25	59.5	N.W.
1856.....	100	32	60.1	S.E.
1857.....	98	31	60.7	S.E.
1858.....	97	29	59.5	S.
1859.....	96	34	58.7	S.
1860.....	90	37	59.0	S.
1861.....	87	36	60.1	S.
1862.....	94	32	62.2	N.W.
1863.....	95	34	60.3	N.W.
1864.....	96	34	62.8	S.E.
1865.....	94	31	61.0	S.E.
1866.....	98	33	62.1	S.E.
1867.....	99	28	59.9	S.
1868.....	100	30	60.1	S.
1869.....	102	31	60.4	S.
1870.....	106	21	59.6	S.
1871.....	102	30	59.6	S.
1872.....	100	26	60.4	N.
1873.....	105	31	60.7	S.
1874.....	96	33	59.8	S.
1875.....	100	33	62.5	S.
1876.....	98	30	61.7	S.
1877.....	103	31	61.2	S.
1878.....	101	24	61.3	S.
1879.....	103	25	60.3	S.
1880.....	98	25	57.2	S.
1881.....	99	32	59.2	S.
1882.....	100	27	58.5	S.
1883.....	104	22	58.8	S.
1884.....	100	21	58.8	S.
1885.....	105	34	61.2	S.
1886.....	105	28	58.8	S.E.
1887.....	100	28	59.9	N.W.
1888.....		* 19		

*Up to March 1, 1888.

Highest temperature in 35 years, 106°—in 1870.

Lowest temperature in 35 years, 19°—in January, 1854, and 19° in January, 1888.

Average annual temperature for 35 years, 60.2°.

General prevailing direction of wind—from the south.

SACRAMENTO "RIVER RECORD," AT SACRAMENTO.

The following table shows the highest and lowest water in the river for each season from 1849 to 1861-2, and 1873-4 to March 1, 1887-8. From 1862-3 to 1872-3, both seasons inclusive, the figures are missing. The zero of the gauge was put down in September, 1849, to the lowest water at the lowest point of ebb tide, and from that the high and low water records commence. This zero point of the gauge is 5 feet above the sea level, and 29 feet below the Central Pacific Railroad track, according to a circular issued March 15, 1875, by the Chief Signal Officer at Washington, D. C. This circular says when the river shows 25 feet on the gauge it is then near the danger line, and at that height it is dangerous to levees within 20 miles of Sacramento. The same circular gives the beginning of the danger line for Oroville as 10 feet: at that point it threatens danger to Marysville and all country below Oroville. The danger line at Marysville begins at about 15 feet, and is then dangerous to levees. At Red Bluff 20 feet is the danger line and 22 feet floods the bottoms. The danger line begins at Folsom City at 30 feet:

Highest, Lowest, and Range of Water in the Sacramento River for each Season, from 1849-50 to 1861-2, and from 1873-4 to 1887-8, to March 1st.

	Highest Water— feet and tenths.	Lowest Water— feet and tenths.	Range of Water—feet and tenths.
1849-50	20.3	zero of gauge	20.8
1850-51	9.7	zero of gauge	9.7
1851-52	20.0	zero of gauge	20.0
1852-53	21.7	2.2	19.5
1853-54	20.3	0.3	20.0
1854-55	20.3	3.0	17.3
1855-56	12.3	3.3	9.0
1856-57	18.3	zero of gauge	18.3
1857-58	18.7	1.4	17.3
1858-59	19.0	1.3	17.7
1859-60	15.3	1.3	14.0
1860-61	21.7	3.0	18.7
1861-62	24.0	2.4	21.6
1873-74	22.5	4.6	17.9
1874-75	22.2	4.3	17.9
1875-76	24.6	7.1	17.5
1876-77	18.2	5.2	13.0
1877-78	26.0	5.3	20.7
1878-79	23.3	5.5	17.8
1879-80	24.4	5.8	18.7
1880-81	26.6	7.4	19.2
1881-82	21.3	6.4	14.9
1882-83	20.7	6.5	14.2
1883-84	23.5	6.5	17.0
1884-85	24.6	7.5	17.1
1885-86	25.6	7.3	18.3
1886-87	20.5	7.5	13.0
1887-88	* 20.0	* 7.2	* 12.8

*Up to March 1, 1888.

NOTE.—The record from 1849-50 was taken from Dr. Thomas M. Logan's report. The gauge was put down in September, 1849, at the lowest stage of water. At that time there was from 23 to 24 feet of water in the channel, and the water was clear, and the rise and fall of the tide amounted to several feet. The lowest water since 1874 shows 4.3 feet above the lowest water of 1849, the zero point of the gauge. If the river had not been filled with slickens, that would indicate over 20 feet of water in the channel; the real fact shows scarcely five feet, with bars too numerous to mention. The river bed has therefore been raised upwards of 20 feet or more by debris.

DAILY NORMAL TEMPERATURE FOR SACRAMENTO.

The following table of normal temperatures for each day of each month, at Sacramento, California, as deduced from three daily observations for nine years, from July, 1877, to December, 1885, inclusive, were prepared at the Chief Signal Office, Washington, D. C., by authority of the Chief Signal Officer:

DATE.	*Jan.	*Feb.	*Mar.	*April.	*May.	*June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	44.2	49.4	55.8	57.7	61.6	69.2	72.3	73.1	73.0	62.3	57.2	50.6
2	45.6	49.5	55.5	58.0	61.7	69.2	71.4	74.0	72.4	62.7	55.6	50.6
3	45.3	49.0	54.0	56.5	62.6	68.8	70.8	73.2	72.5	63.6	*56.5	49.6
4	45.5	49.7	53.4	†57.7	61.2	68.5	71.2	71.9	73.4	64.0	55.5	50.2
5	47.2	48.0	54.8	58.0	61.5	69.4	71.4	72.8	71.8	63.7	56.2	50.6
6	45.9	47.6	54.4	58.3	61.6	68.2	71.5	73.7	69.9	62.7	56.6	49.4
7	46.7	46.0	53.9	58.4	61.4	67.9	70.7	73.9	70.3	62.9	56.9	47.7
8	47.6	47.1	53.7	60.1	62.5	67.2	70.5	74.8	71.5	*62.5	56.2	45.9
9	45.8	47.1	53.7	58.8	61.4	67.5	71.0	75.4	70.8	63.0	55.0	46.1
10	45.9	†48.4	53.0	57.6	62.0	66.1	72.8	74.8	70.9	61.8	53.3	46.1
11	43.9	46.8	53.3	57.3	61.4	†65.7	74.4	74.3	69.9	61.1	52.1	46.4
12	42.7	46.2	53.4	56.6	59.4	68.2	75.4	72.5	70.4	58.7	51.7	45.3
13	43.6	48.1	53.2	56.2	59.9	68.5	74.0	72.0	70.8	57.0	52.0	44.7
14	45.7	47.9	54.1	56.8	59.2	68.3	74.1	72.8	70.4	56.6	53.0	45.7
15	44.6	47.3	54.0	46.5	60.4	67.8	71.5	73.3	70.3	58.6	52.3	47.8
16	45.9	48.8	54.8	55.4	60.4	68.4	73.0	*72.1	68.3	58.9	52.5	47.3
17	46.0	48.9	53.5	54.7	61.5	69.3	72.5	71.5	68.0	60.9	50.5	47.3
18	†45.5	49.7	53.4	56.4	64.0	69.2	70.6	72.9	67.6	61.4	50.1	49.2
19	45.4	50.1	54.0	54.4	65.8	68.6	71.0	71.7	67.5	62.2	50.2	48.6
20	45.7	50.3	55.5	55.4	64.7	68.8	72.5	69.5	68.3	61.3	50.5	47.2
21	45.8	51.2	56.2	57.5	64.0	68.4	73.2	69.2	69.6	61.4	51.0	48.7
22	†47.4	51.9	57.0	58.2	63.8	67.2	73.6	69.5	69.5	60.9	50.7	48.7
23	47.4	53.1	56.5	58.3	64.8	69.2	74.5	69.4	67.3	60.5	50.9	48.0
24	48.0	53.4	56.4	60.1	66.3	68.8	73.3	69.3	66.4	61.0	50.4	49.3
25	47.4	54.9	57.0	58.5	66.9	70.5	71.8	69.7	66.4	61.3	48.5	48.2
26	45.8	54.8	56.4	58.1	67.0	71.5	71.3	69.6	66.7	59.7	48.3	47.2
27	46.3	55.0	†58.4	61.0	67.8	70.5	72.7	69.9	67.1	60.0	48.7	46.7
28	47.1	54.7	56.5	62.7	68.5	68.8	72.3	69.5	66.3	59.7	48.9	46.1
29	48.0	-----	57.6	62.7	69.0	69.6	71.7	70.1	65.1	59.6	50.1	44.1
30	48.2	-----	57.2	52.6	68.9	71.5	72.5	71.7	63.1	58.1	50.4	43.5
31	49.4	-----	57.1	-----	69.0	-----	72.4	72.7	-----	55.9	-----	42.6
Monthly	46.1	49.9	55.1	58.0	63.6	68.7	72.3	72.0	69.2	60.8	52.4	47.4

*Means for eight years.

†Means for seven years.

MONTHLY NORMAL TEMPERATURE FOR SACRAMENTO.

The following normal temperatures for each month of the year, for Sacramento, from 1853 to 1887, inclusive—a period of thirty-five years. This table gives the general average temperature for each month, and the annual average, which is termed the normal temperature of a place, in this case being Sacramento, and calculated from three daily observations:

NORMAL TEMPERATURE OF THIRTY-FIVE YEARS.

	Degrees.		Degrees.
January.....	47.0	August.....	71.6
February.....	50.8	September.....	69.1
March.....	55.1	October.....	62.5
April.....	59.1	November.....	53.3
May.....	64.2	December.....	47.2
June.....	70.2	Yearly.....	60.2
July.....	73.0		
Normal winter temperature of thirty-five years.....	48.3		
Normal spring temperature of thirty-five years.....	59.5		
Normal summer temperature of thirty-five years.....	71.6		
Normal autumn temperature of thirty-five years.....	61.6		
Normal yearly temperature of thirty-five years.....	60.2		

DAILY NORMAL PRECIPITATION AT SACRAMENTO.

The following table gives the normal precipitation for each day of each month, at Sacramento, as deduced from thirty-eight years' observations, beginning with 1850, and ending with 1887, both years inclusive:

DATE.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	.12	.10	.09	.06	.02	.01	.01	T.	T.	.02	.07	.14
2.....	.12	.10	.09	.07	.02	T.	T.	T.	T.	.02	.07	.14
3.....	.12	.11	.09	.06	.02	.01	T.	T.	.01	.02	.07	.14
4.....	.12	.10	.09	.07	.02	T.	T.	T.	T.	.02	.07	.14
5.....	.13	.10	.09	.06	.03	.01	T.	T.	T.	.02	.07	.14
6.....	.12	.11	.09	.07	.02	T.	T.	T.	.01	.02	.07	.14
7.....	.12	.10	.09	.06	.02	.01	T.	T.	T.	.03	.06	.14
8.....	.12	.10	.09	.07	.02	T.	T.	T.	.01	.02	.07	.14
9.....	.12	.11	.09	.06	.02	.01	T.	T.	T.	.02	.07	.14
10.....	.12	.10	.09	.07	.03	T.	T.	T.	.01	.02	.07	.14
11.....	.13	.10	.09	.06	.02	.01	T.	T.	T.	.02	.07	.14
12.....	.12	.11	.09	.07	.02	T.	T.	T.	.01	.02	.07	.14
13.....	.12	.10	.09	.06	.02	.01	T.	T.	T.	.02	.07	.14
14.....	.12	.10	.09	.07	.02	T.	T.	T.	T.	.02	.06	.14
15.....	.12	.11	.10	.06	.03	.01	.01	T.	.01	.03	.07	.13
16.....	.12	.10	.09	.07	.02	T.	T.	T.	T.	.02	.07	.14
17.....	.13	.10	.09	.06	.02	.01	T.	T.	T.	.02	.07	.13
18.....	.12	.11	.09	.07	.02	T.	T.	T.	.01	.02	.07	.14
19.....	.12	.10	.09	.06	.02	.01	T.	T.	T.	.02	.07	.14
20.....	.12	.10	.09	.07	.03	T.	T.	T.	.01	.02	.07	.14
21.....	.12	.11	.09	.06	.02	.01	T.	T.	T.	.02	.06	.14
22.....	.12	.10	.09	.07	.02	T.	T.	T.	.01	.02	.07	.14
23.....	.13	.10	.09	.06	.02	.01	T.	T.	T.	.03	.07	.14
24.....	.12	.11	.09	.07	.02	T.	T.	T.	T.	.02	.07	.14
25.....	.12	.10	.09	.06	.03	T.	T.	T.	.01	.02	.07	.14
26.....	.12	.10	.09	.07	.02	T.	T.	T.	T.	.02	.07	.14
27.....	.12	.11	.09	.06	.02	T.	T.	T.	T.	.02	.07	.14
28.....	.12	.10	.09	.07	.02	T.	T.	T.	.01	.02	.06	.14
29.....	.12	.09	.06	.02	T.	T.	T.	T.	T.	.02	.07	.14
30.....	.13	.10	.07	.03	T.	.01	T.	T.	T.	.03	.07	.13
31.....	.12	.09	.02	.02	.02	T.	T.	T.	.02	.02	.14	
Monthly normals.....	3.77	2.89	2.81	1.95	.68	.12	.03	.003	.11	.66	2.06	4.32

Yearly normal precipitation, 19.40 inches.

DATE OF FIRST AND LAST LIGHT AND KILLING FROSTS, AND DATE OF
BLOOMING FRUIT TREES, IN SACRAMENTO.

The following table of first and last light frosts, first and last killing frosts, along with the lowest temperature, and also the dates at which fruit trees were first noticed beginning to bloom, and the dates and amounts of snowfall for nineteen years, are from the records of Mr. Samuel H. Gerish, a local and voluntary meteorological observer of the Signal Service, who furnished this data for publication:

YEAR.	Date of First Light Frost of the Season.	Minimum Temperature at time of First Light Frost.	Date of First Killing Frost of the Season.	Minimum Temperature at time of First Killing Frost.
1869-70.....	November 8, 1869.....	40	November 30, 1869.....	31
1870-71.....	October 24, 1870.....	36	October 27, 1870.....	30
1871-72.....	October 25, 1871.....	37	November 6, 1871.....	30
1872-73.....	October 22, 1872.....	37	November 10, 1872.....	27
1873-74.....	October 16, 1873.....	33	October 17, 1873.....	31
1874-75.....	October 29, 1874.....	39	November 20, 1874.....	29
1875-76.....	October 28, 1875.....	38	No killing frost; coldest on December 21, 1875.....	35
1876-77.....	November 3, 1876.....	36	November 13, 1876.....	29
1877-78.....	October 31, 1877.....	33	November 1, 1887.....	31
1878-79.....	October 16, 1878.....	37	October 28, 1878.....	29
1879-80.....	October 8, 1879.....	39	November 27, 1879.....	25
1880-81.....	October 31, 1880.....	35	November 13, 1880.....	28
1881-82.....	October 4, 1881.....	36	November 11, 1881.....	30
1882-83.....	October 5, 1882.....	42	November 13, 1882.....	27
1883-84.....	October 16, 1883.....	39	November 4, 1883.....	31
1884-85.....	September 30, 1884.....	41	November 30, 1884.....	31
1885-86.....	October 11, 1885.....	38	No killing frost; coldest on December 28, 1885.....	34
1886-87.....	October 9, 1886.....	40	November 4, 1886.....	32
1887-88.....	October 20, 1887.....	37	November 25, 1887.....	28

YEAR.	Date of Last Light Frost of the Season.	Minimum Temperature at time of Last Light Frost.	Date of Last Killing Frost of the Season.	Minimum Temperature at time of Last Killing Frost.	Date of the First Appearance of Blossoming Fruit Trees.
1869-70..	May 17, 1870.....	41	March 8, 1870.....	31	February 21, 1870
1870-71..	April 19, 1871.....	40	March 18, 1871.....	31	..... March 8, 1871
1871-72..	April 12, 1872.....	38	January 9, 1872.....	27	February 26, 1872
1872-73..	April 6, 1873.....	34	April 5, 1873.....	27	February 16, 1873
1873-74..	April 14, 1874.....	38	March 19, 1874.....	28	February 14, 1874
1874-75..	April 7, 1875.....	31	April 6, 1875; coldest ever known.....	24	February 21, 1875
1875-76..	April 8, 1876.....	38	January 16, 1876.....	29	February 20, 1876
1876-77..	April 23, 1877.....	42	February 11, 1877.....	32	February 2, 1877
1877-78..	March 9, 1878.....	39	January 12, 1878.....	30	February 1, 1878
1878-79..	April 15, 1879.....	41	February 6, 1879.....	27	February 15, 1879
1879-80..	April 18, 1880.....	37	March 30, 1880.....	28	February 29, 1880
1880-81..	March 18, 1881.....	33	March 17, 1881.....	31	February 22, 1881
1881-82..	May 15, 1882.....	41	March 9, 1882.....	29	February 28, 1882
1882-83..	May 2, 1883.....	41	February 18, 1883.....	29	February 19, 1883
1883-84..	April 17, 1884.....	43	February 18, 1884.....	31	February 20, 1884
1884-85..	April 22, 1885.....	41	January 26, 1885.....	31	February 10, 1885
1885-86..	April 14, 1886.....	39	January 10, 1886.....	27	February 8, 1886
1886-87..	May 10, 1887.....	34	February 26, 1887.....	26	January 28, 1887
1887-88..	.....	.....	.....	.....	January 20, 1888

DATES OF SNOWFALL IN SACRAMENTO AND THE AMOUNT PRECIPITATED.

January 29, 1862—.75 of an inch.
 January 12, 1868—1.62 inches.
 December 3, 1873—6.00 inches.
 April 5, 1875—A trace; enough to whiten the ground before it melted. This was the coldest April ever known.
 A very light trace on January 13, 1879.
 January 26, 1880—Estimated about .25 of an inch. It mostly melted as it fell.
 February 17 and 18, 1882—Light trace.
 December 31, 1882—Estimated about four inches; measured 1.50 inches actual measurement.
 February 1 and 6, 1883—A very light fall of snow.
 January 4, 1888—2.89 inches.
 January 5, 1888—3.00 inches. The snow that fell on the fifth was very damp and packed hard; if it had been as light as that on the fifth, I think we would have had over six inches.
 January 16, 1888—A trace.

The following Signal Service data, from the Sacramento Signal Office records, show the number of days during each winter upon which the mean average daily temperature was less than 40°, along with the lowest daily average during each winter; also the highest and lowest temperature and total rainfall for each winter in ten years:

WINTER OF—	Days Average Temperature below 40°.	Lowest Daily Average.	Highest Temperature.	Lowest Temperature.	Rainfall—Inches and Hundredths.
1877-78 -----	2	38.7	67	27	18.74
1878-79 -----	0	.0	74	24	7.53
1879-80 -----	17	32.8	64	25	6.88
1880-81 -----	0	.0	67	35	23.01
1881-82 -----	3	38.4	63	29	7.56
1882-83 -----	21	30.6	72	22	4.47
1883-84 -----	13	34.5	71	21	8.33
1884-85 -----	1	39.0	70	27	13.10
1885-86 -----	5	37.6	73	28	14.00
1886-87 -----	1	36.6	67	30	9.61
1887-88 -----	*15	27.7	65	19	*6.90

*Up to March 1, 1888.

The table above shows that generally speaking the winters whose records give a decided preponderance of days whose average temperatures are less than 40°, coincide with the winters of least rain; and those having none, or but a day or so, with an average daily temperature below 40°, correspond with the winters of copious precipitation, there being but two exceptions to the above rule. The winters of 1878-79, and 1881-82, were comparatively warm, and moderately dry ones.

The average winters' rain in thirty-eight years was 11.25 inches. The table shows that four winters have been excessively dry ones: while the winters that were wet were noted for their warmth.

NORTHERN CALIFORNIA TEMPERATURE.

EDITORS BEE: In your paper yesterday (February 10, 1888), in giving the comparison of the weather at Los Angeles, Oroville, etc., I find a very grave error in favor of Los Angeles. Now, your table gives the mean winter temperature at Los Angeles as 56.6°, and for the year as 61.4°. I would like any one in Los Angeles to produce the figures that will give that city a mean average winter temperature of 56.6°, and an average yearly temperature of 61.4°. Why, Mr. Editor, that would make the winter average at

Los Angeles greater than Algiers or Malaga, New Orleans or Pensacola. In a multitude of doctors the patient dies, and too many cooks spoil the broth. Now, of the three following records, which, think ye, is correct? If you will kindly turn to page 379 of the State Agricultural Report for 1886, you will find an article on "The Climatology of Southern California," by Dr. H. H. Orme, of Los Angeles, President of the State Board of Health. In that short table he says: "The mean temperature of December, January, and February (which are the winter months) is, at Los Angeles, 50.0°." The Signal Service records for ten years, from the winter of 1877-8 to that of 1886-7, both included, gives the mean average winter temperature of those ten years as 53.9°, or in whole numbers 54.0°.

In your tabulated statement yesterday the average winter temperature is given as 56.6°. We now have three distinct and radically different winter temperatures for that one point. The average of three different sets of figures is 53.4, or not quite as much as the Signal Service figures. I think that the latter is nearer correct than either Dr. Orme's figures or those published in the "Bee" of yesterday. In a ten-year record the highest winter temperature at Los Angeles was 57.4° in 1885-6, and the lowest was 50.4° in 1879-80. A rather singular coincidence is that the mean of the coldest and warmest winter added together and divided by two, gives exactly the mean average winter temperature for ten years, 53.9°. The Chief Signal Officer's report for 1885 gives the average yearly temperature at Los Angeles, for seven years, as follows, beginning with 1877—60.7°, 60.6°, 58.4°, 61.1°, 60.1°, 61.6°, 60.8°: average for seven years, 60.5°. Now, you might take the records for ten years or seven years and give Los Angeles a black eye by choosing the lowest winter mean, 50.4°, and the lowest annual or yearly mean 58.4°, and show that for the Los Angeles climate: in a measure, it would be true, but, nevertheless, it would be taking an unfair advantage of that city. The natives of that booming burg might go to the opposite extreme and say their winter temperature is 57.4°, and yearly temperature 61.6°. While neither would be a fair representation of facts, they would be true all the same. We therefore find a happy medium in a ten years' average, which gives the winter temperature as being 53.9°.

The northern citrus belt, where the average winter temperatures are equal, or nearly so, with Los Angeles, are as follows, in round numbers: Oroville, 53°, within one degree of Los Angeles; Orland, 53°; Nicolaus, 51°; Anderson, way up in Shasta County, is 50°, only four below Los Angeles. You will see then that, instead of Oroville, Thermalito, and Palermo, in Butte County, being only 4° colder in winter than Los Angeles, that but 1° is all the difference that exists.

During some winters Oroville is the warmest. For instance, the winter temperature of 1884-5 at Oroville was 55.4°, while at Los Angeles the winter temperature was but 54.3°, which was 1.1° colder than the famous citrus belt of northern California.

The following table gives the Signal Service averages for each season and for the year at Los Angeles, Oroville, California, and Metone. The record for Los Angeles was obtained from the Chief Signal Officer's report, and was deduced from seven years' observations, from 1877 to 1884:

PLACES.	Mean Winter Temperature.	Mean Spring Temperature.	Mean Summer Temperature.	Mean Autumn Temperature.	Mean Yearly Temperature.
Los Angeles	53.6	58.4	67.8	62.7	60.6
Oroville	52.9	64.5	78.8	64.3	64.9
Metone	49.5	60.0	73.0	55.6	60.8

It will be seen by the above figures that Oroville is but 0.7° (seven tenths of a degree) colder in winter than Los Angeles; 6.1° warmer in the spring, and 1.6° warmer in the fall. Los Angeles papers say that the hot summer in Oroville makes the yearly mean high. We will admit it. But supposing the summer temperature at Oroville was no higher than at Los Angeles, 67.8 , then the average yearly temperature at Oroville would still be 1.8° higher than Los Angeles. Therefore, that argument of your Los Angeles exchanges falls to the ground. The truth of the whole matter is this: Oroville has a much warmer spring and fall temperature than does the southern metropolis, and it is impossible to twist the figures in any truthful shape but that this fact will stand boldly out. Then, again, Los Angeles has ten years to obtain her average, while Oroville has only four. To show that a great number of years are desirable in getting a true mean, Sacramento will be given as an example. The Signal Service mean temperature for Sacramento in seven years is but 59.2° , while Dr. Logan's and the Signal Service records combined give an average yearly temperature for thirty-five years at 60.2° , which must be nearer the true average than 59.2° .

The average winter temperature at Los Angeles for seven years is 53.6° , while the average for ten years is 53.9° . This shows an increase of three tenths of a degree at that point by having a greater number of years to obtain an average from. Therefore, when Oroville's record runs for ten or twenty years, the average winter temperature will be a more accurate one than at present, and a higher one also.

Respectfully,

SERGEANT JAMES A. BARWICK,
Observer Signal Corps.

THE CITY OF SACRAMENTO.

By WINFIELD J. DAVIS, Official Reporter of the Courts.

The great seal of the State of California is happily designed. The goddess Minerva is the principal feature. Minerva, the happiest of conceptions of Grecian mythology, sprang forth fully armored, and with a mighty war-shout, from the brain of Jupiter. She was the patron of heroism among men, the protectress of the arts of peace, the symbol of thought, and the goddess of wisdom. So did California come into the sisterhood of the States of the American Union full fledged, and without territorial probation. Like Minerva, when the hour of trouble came, she was the patron of heroism. From her soil was taken the gold, without which the confederacy of the States could not have been maintained.

The Capital City of this great western State was happily located. Planted at the confluence of two large rivers, at the median between the great metropolis at the sea and the mines, it was a natural center. The era of mining passed, yet Sacramento found herself the heart of the richest agricultural section in the world. With the remarkable developments in the way of material resources that have been made in Northern and Central California in the last few years, Sacramento has kept full pace. To her marts the products of the great commonwealth naturally drift, and are shipped to the outside world. No city in the State or nation has a more advantageous position and surrounding.

The City of Sacramento is the county seat of Sacramento County, and

capital of California. Latitude $38^{\circ} 35' N.$, longitude $121^{\circ} 30' W.$ Distance by rail from San Francisco, eighty-three miles. The city is located on an extensive plain, on the east bank of the Sacramento River, immediately south of its confluence with the American River.

The streets are wide, and cross at right angles: those running east and west are designated by the letters of the alphabet, and those crossing them, north and south, are numbered, commencing at the Sacramento River. The business portion is built of brick, and the residence portion of wood. Shade trees are abundant, and almost every residence yard is lawned and planted with orange trees, palms, and ornamental plants. The climate is semi-tropical, and in the open air in the year around there is a luxuriant growth of trees and flowers.

The first railroad in California, extending from Sacramento into El Dorado County, was formally opened on February 22, 1856. Work on the Central Pacific Railroad was inaugurated at Sacramento January 8, 1863, and the last spike was driven May 10, 1869. Sacramento is on the line of the California and Oregon, Western Pacific, Central Pacific, California Pacific, and Sacramento and Placerville Railroads. All these roads are of the Southern Pacific system, the shops of which are located in the city, covering twenty-five acres of land, and furnishing constant employment to about two thousand men. The company's hospital is also located in the city. A line of steamboats run to San Francisco on the Sacramento River and the bays, and another as far up the same stream as Red Bluff. The Sacramento River is spanned opposite the city by a railroad and wagon bridge, connecting it with the town of Washington, Yolo County; and the American River is bridged on the line of Twelfth Street, and also by a railroad bridge a short distance above. All the bridges in the county and all roads are free.

The capital of California was permanently located at Sacramento, February 25, 1854, and in 1869, the present capitol building was completed, at a cost of about \$3,000,000. The building is the finest in the State. In the Capitol Park are also the Exposition Pavilion of the State Agricultural Society, and the State Printing Office, in which are printed, in addition to the usual work for the State, the text-books for use in the public schools. The State Agricultural Society has also an extensive park for the exhibition of stock, and one of the finest race tracks in the world. The State Fairs are annually held in September. The Masons and Odd Fellows have each imposing temples, in which their lodge-rooms are located. The United States government has purchased a site for a Post Office building, to be erected immediately, for which an appropriation of \$100,000 has been made. The County Court House (formerly used for a State Capitol) cost \$200,000; and a brick and iron Hall of Records has recently been completed at a cost of \$50,000. The County Hospital, built on the pavilion plan, can accommodate one hundred and seventy-five patients, and cost \$75,000.

There are in the city twenty-seven hotels, one national and three commercial and savings banks; three dailies, two semi-weekly (German), four weekly newspapers, and three monthlies, and seventeen churches. The Catholic cathedral, now in course of construction, will cost \$250,000. There are also twelve public school buildings, three colleges, four private schools, and one art school.

The State Library contains some sixty thousand volumes; and the free public library, of twelve thousand volumes, is maintained by a small city tax, and with the two-story building in which it is contained, is the property of the city. The Order of Odd Fellows maintain a library of about

eight thousand volumes. The Crocker art gallery is also the property of the city. It is a brick and iron building, three stories high, and in it are contained some of the finest paintings and statuary in the Union, together with an extensive cabinet of minerals, the property of the State.

The city has four flouring mills, four planing mills, two box factories, one broom factory, one cannery, two wineries, seven carriage manufactories, two spice mills, three potteries, and five foundries.

Sacramento is lighted with gas and electricity, most of the street lighting being furnished by the latter means. The waterworks is the property of the city, and the water takers are charged at a rate to afford a revenue slightly in excess of the amount necessary to meet the running expenses of the works. The water is pumped directly into the city mains from the Sacramento River. The pumps are of the latest pattern, and the pressure is exerted by their power.

The State Capitol Park embraces twenty-five acres of land, and the city plaza two and a half. Both parks are lawned, and planted with the choicest varieties of trees, shrubs, and flowering and ornamental plants, and fountains are appropriately placed. During the summer months semi-weekly open-air concerts are given at these parks by brass bands, and are universally attended.

In 1839 Captain John A. Sutter established a fort, now included within the city limits, but the city was not laid out until 1848, after the discovery of gold. The thousands of gold seekers who arrived in the country came up the river to Sacramento in steamers and sailing vessels, and from that point proceeded by land to the mines. A canvas town was at first established on the river bank, and soon the substantial buildings of a city were erected. With the run of California cities, Sacramento has experienced its great fires. On November 2, 1852, most of the business portion was burned, and again on July 13, 1854, a great fire swept over the same ground and destroyed all that had been rebuilt after the 1852 conflagration. The city is now protected by an efficient paid fire department.

SACRAMENTO AS A NATURAL TRADE CENTER.

By C. K. McCLATCHY, Managing Editor Sacramento Daily Evening Bee.

Sacramento, situated as she is, the center and metropolis of the richest portion of California, the very heart of a vast railroad system, and with magnificent water power right at her very doors, presents advantages to intending investors in manufactures equaled by no city on the Pacific Slope. That this is so is amply proved by the presence here of the vast shops of the Southern Pacific Company, in which they build their own cars, locomotives, and general rolling stock, and do their own repairing. Notwithstanding they were offered all the land free near Rocklin they could use, and right on the line of the railroad, the shrewd Directors—with an eye to the advantages of the present and the wonderful probabilities of the future—wisely decided to obtain land in this city, where every conceivable convenience would be right at their very hands. The result has been that to-day their buildings occupy some thirty acres; that there are employed therein over two thousand men, with a payroll of \$120,000 per month. This alone should be sufficient to demonstrate the inducements which Sacramento offers as aids to manufacture. These shops are situated within a stone's throw of the Sacramento River, and within easy reach of the Ameri-

can on the north. Here is a magnificent water power rushing past their open doors every day in the year, and the company intend to take advantage of it in several of their shops as soon as they can make the necessary arrangements.

But while the railroad shops are the prominent manufacturing interests of Sacramento, they are by no means the only one, and the others should not be lost sight of. For instance, there are three great and extensive flouring mills right in our midst. These mills send broadcast all over the world some sixty million pounds of flour annually, or about three hundred thousand barrels. The millers in Sacramento have several advantages of location. In the first place, owing to the fact of a lesser tariff for freight, wheat can always be bought here at \$1 a ton less than the ruling rates at San Francisco. It takes about a ton and a half of wheat to make a ton of flour, and so it follows that flour can be manufactured here about 15 cents a barrel cheaper than in San Francisco. That, then, gives millers here an even chance on ocean shipments, while they have immeasurably the best of it on all inland consignments. Besides, these mills are right on the direct line of railroad and river travel.

Sacramento has also three iron foundries, which turn out large quantities of most superior work. She possessed a woolen mill, which became noted for the excellence of its goods all over the coast, but which was unfortunately burned down. For many years a beet sugar factory was in operation, and its buildings stand to-day reproachful monuments to mismanagement. There is no reason why a beet sugar factory should not pay well here if properly conducted, in the hands of a skillful and skilled foreman. Every imaginable advantage can here be found. Sacramento also possessed an extensive smelting works, but that, too, was in the hands of men new to the management of such an establishment, and fire subsequently finished the disasters which incompetency had inaugurated.

The manufacture of brick is a very extensive industry in Sacramento County. The supply of the best soil to be found anywhere for this purpose is inexhaustible, and Sacramento County brick has a name all over the coast. Here, again, transportation facilities, both by land and water, are unsurpassed. There are half a dozen breweries in Sacramento City which do a thriving business. As Sacramento is one of the great hop countries of the world, the brewers have their materials at their very doors.

Scores of other manufactories might be enumerated—carriage, buggy, and wagon manufactories, furniture manufactories, manufactories of sashes, doors, and blinds, extensive sawmills, potteries, box factories, soap factories, and many others. But the space to be devoted to this article is limited, and the purpose thereof is not so much to show what we now have, as to concisely present to the outside world all the manifold advantages which Sacramento offers for the establishment of profitable manufactories of all kinds.

The object, then, being to place the manifold advantages of Sacramento as a manufacturing center prominently before the eyes of intending immigrants and expectant capitalists, it is not so much desirable to present before them what we have already in the line of manufactories, as to show them the reasons why Sacramento offers them inducements for the establishment of such manufactories that cannot be rivalled anywhere. Some of these inducements might be enumerated thus:

Availability.—Sacramento is the center almost of the State. It is ironed by railroads and lapped by rivers. Twenty-seven trains dart past it every day. It is the pivot of traffic, the magnet of travel. Freight from the four centers has to pass through this capital city of the Golden State, and the

vast bulk of overland travel skirts by her doors. Through her extensive system of railroad and river communication, this city taps all of Northern and Central California. The city, then, is thoroughly known all over this section of the State, and knowledge makes the market.

Salubrity.—Statistics prove that Sacramento is the second healthiest city in the United States—Auburn, New York, being given the first place. When men desire to locate anywhere, either for business or for pleasure, the above of itself is a sterling recommendation.

Motive Power.—It would be possible to enumerate a dozen other advantages possessed by this city as a site for manufactories, but space forbids. The one great and overshadowing merit she has in this matter is the wonderful water power right at her very gates, which can be had and utilized for a song. The limpid Sacramento comes caressingly down past the very breast, while the impetuous American dashes over her shoulders. There is latent power enough in the latter river to run all the manufactories of Massachusetts. Figures have proven that there is frequently a fall of twenty feet in that river at Folsom in twenty-four hours. What a tremendous power that is, if properly applied! Why, it could make the banks of the American and Sacramento Rivers echo to the sound of hammer and forge, of tongs and anvils, while the music of the bellows whistled to the rushing stream. There are really no such advantages for manufactories presented on the Pacific Slope as are offered in Sacramento.

THE SANITARY ASPECT OF SACRAMENTO.

By JAMES H. PARKINSON, City Physician.

Sacramento, the capital of the State, is situated at the junction of the Sacramento and American Rivers, in latitude $38^{\circ} 35'$, longitude $121^{\circ} 30'$; height above sea level, 30 feet. The site is comparatively level, there being a slight fall of four inches to the block from north to south. The natural level has been raised by the official grade two to three feet in all parts of the city, while I, J, and K Streets have been raised ten to twelve feet for thirteen blocks, and L Street for a portion of that distance. The soil is alluvial deposit, the site having been periodically overflowed at high water for ages. The city is now amply protected by levees, so excellently constructed that but little seepage occurs during the highest water. The porous condition of the soil facilitates the rapid removal of surface water, except during the brief period when the river level is above that of the city. The alternate rise and fall of the river produces a flushing or suction action, whereby the subsoil is alternately filled with water and drained, thus largely purifying it. The level of the ground water varies with the character of the season and the time of year, being roughly from one to six feet, according to locality. The more densely populated parts of the city are well sewered, the matter passing by gravity flow through a canal outside the city limits into a chain of lakes some miles to the southward. During the season when the water level no longer admits of a flow by gravity, the sewage is discharged into a reservoir, and thence pumped into the river. The water supply of the city is derived from the Sacramento, and is pumped directly into the supply pipes without previous treatment. This water is of uniformly excellent quality; its appearance at certain seasons is characteristic of streams flowing through alluvial soil between soft banks, periodically submerged. By proper filtration, it can be perfectly cleared, and then

makes a very agreeable table water. An analysis by Professor Hilgard, shows—

	Grains per Gallon.
Carbonate of soda.....	0.27
Chloride of sodium, sulphate of sodium.....	1.42
Carbonate of lime.....	0.31
Carbonate of magnesia.....	0.25
Silica.....	1.85
Sulphate of lime.....	0.42
Phosphate of lime.....	1.48
Iron and maganese carbonates.....	0.63
Alumina.....	0.07
Vegetable matter.....	0.00
Total.....	6.69

This equals the average drinking water in any locality.

The climatology of Sacramento bears a general resemblance to that of the great valley in which it lies: the mean annual temperature for the nine years ending 1886 being 60.2°, the mean, maximum, and minimum, being 82.5° and 41.4°, giving a range of 41.1°; extremes of temperature are absent, the winters being mild and the summers uniformly cool. This is perhaps best shown by the fact that in the nine years from 1878 to 1886 there have been only 96 days on which the temperature was below 32°, and but 331 days on which the mercury rose above 90°, giving an annual average of 10 and 37 days respectively. The great feature which renders the summer climate pleasurable is the universal prevalence of cool nights: the mean temperature of the nights from June to August, during the years 1877 to 1887, was 60°, and there were only nineteen nights in which the thermometer stood at or over 70°. This fact is due to the trade wind which reaches us as a south breeze at about 4 p. m., and continues blowing with a mean summer velocity of seven miles till early morning. The numerous shade trees and liberal sprinkling of the streets in summer perceptibly lower the temperature during the days of extreme heat.

The seasons are divided distinctly into dry and wet. The latter comprises the months of November to May, the dry from June to October. The months of greatest precipitation are December and January. For the thirty-seven years from 1850 to 1886, the maximum precipitation was 34.92, the minimum 8.44, giving a mean of 19.60. The mean relative humidity for the years 1879 to 1884 was 67.4, or 60.2 for the dry and 72.8 for the wet seasons.

The prevailing diseases are those of a malarial type. This is invariably of a mild form, the malignant ague of the Southern and Middle States being here of the rarest occurrence. Malaria is now much less prevalent than in former years, and shows a steady annual decline in the number of cases, as well as in the change from remittent and quotidian to the milder second and third day fevers. This change is due to improved drainage, the general elevation of the city level, and to the great increase in the amount of ground under cultivation. With the exception of malarial trouble there is no endemic disease in the Sacramento Valley, and this prevalence is now due to the fact that throughout the county the greater portion of the rural population is located on the rich bottom lands of the Sacramento, American, and Cosumnes Rivers. Each season brings its quota of disease to which atmospheric conditions may predispose, but speaking generally it may be stated that owing to the milder climate, the diseases of exposure are here less prevalent. In considering the subject of vital statistics, it must be borne in mind that in common with other centers of population, Sacramento receives annually many invalids whose deaths ought not properly to

be credited to the general mortality. This is particularly the case in connection with the railroad hospital, which receives during the year the sick and injured from all portions of California, as well as from other States. Notwithstanding the foregoing, the annual death rate compares most favorably with that of other cities. For the years from November 1, 1885, to 1887, the mean annual rate per 1,000, on an estimated population of 30,000, was 13.05; the mean monthly death rate for the year 1886 was 13.20, and for the year 1887, 13.10. The mean annual mortality from zymotic diseases for 1886 and 1887 was 47.5; the mean monthly mortality being 3.95. The presence or absence of zymotic disease in a given locality may be taken as good evidence of its sanitary condition and as a reliable test of its salubrity. These figures, therefore, are self-evident testimony of the general healthfulness of Sacramento.

The following tabulated matter is a supplement to Dr. T. H. Parkinson's article, and speaks volumes for the cool nights of Sacramento City. There will be noticed that but three hot nights in succession occurred in the nineteen days in eleven years—these were June 5, 6, and 7, 1883; and two nights in succession, on but three occasions—August 1 and 2, 1879; July 15 and 16, 1886; and June 19 and 20, 1887. One extremely hot night, when the lowest temperature was but 74°; the usual night average temperature being about 60°:

YEAR.	Number of Nights that were considered Hot.	Lowest Temperature on Nights that were considered Hot, and when the Minimum Temperature Fell no Lower than 70°, with Month, Date, and Temperature.
1877	None	None.
1878	One day	August 13, 70°.
1879	Two days	August 1, 73°; 2, 70°.
1880	None	None.
1881	None	None.
1882	None	None.
1883	Six days	June 5, 71°; 6, 72°; 7, 72°; and 9, 74°; July 2, 72°; and August 18, 70°.
1884	One day	July 11, 70°.
1885	Three days	August 3, 71°; 15, 74°; 17, 70°.
1886	Three days	July 15, 74°; 16, 73°; August 11, 70°.
1887	Three days	May 28, 72°; June 19, 71°; 20, 72°.

Total number of days in eleven years, 19.

THE PRODUCE SHIPPED FROM SACRAMENTO.

By EUGENE J. GREGORY, Mayor of the City of Sacramento.

Sacramento, by reason of her natural resources, geographical relation to the various producing sections, and admirable transportation facilities, deservedly sustains the reputation of being the largest fruit and vegetable shipping point in the State, and is the recognized outlet for the products of Central and Northern California. These facts are fully established by statistics, which demonstrate that the industries mentioned have constantly strengthened and increased until both are now powerful factors in the prosperity of California. From the commencement the increase has been extraordinary. When the hardy pioneer allotted an occasional hour from his search for gold to till the soil and plant a few trees—for either benefit or decoration of his then primitive surroundings—he little thought that he

was unconsciously sowing the seeds of a great industry which was destined to reach such vast proportions as to ultimately overshadow all other pursuits and enterprises; that he was paving the way for commercial prosperity in our State: such is now the case, especially in Sacramento County, in the possession of manifold natural advantages in climate, soil, and productions. Within its borders every kind, character, and variety of agricultural, horticultural, and viticultural products thrive, and in abundance, the excellence of which command universal and almost unlimited demand from all portions of the civilized world.

Although the crop of 1887 was the largest known in the history of our State, yet the requirements have been greater than the supply; a condition which clearly proves that the industry is still in its infancy, and that the production and output must necessarily increase, until its magnitude will be something enormous to contemplate.

The carload shipments from Sacramento during 1887 amounted to the enormous figures of thirty-two million six hundred and four thousand pounds of green fruit and vegetables; an increase of over 35 per cent against the season of 1886, while that particular year had gained in the same proportion over its predecessor. These shipments were distributed in every quarter of the United States, Canada, and Mexico, as well as in the islands of the Pacific Ocean, while a very large quantity has been successfully transported to various European markets, London, Paris, Edinburgh, Glasgow, Galway, etc. When ocean transportation methods are improved and facilitated, we may confidently look forward to a large and extensive export outlet for our products.

Our dried and canned products readily command the world for a market—an advantage that is possessed by California alone, regardless of product or staple. This particular and important branch of the industry has already assumed standard record, and does not, therefore, require comment at my hands.

In the vegetable product our resources show a never failing yield of choice quality and desirable variety, which—from the generous influences of climate, soil, and season is Sacramento County so greatly blessed—places that staple before us in such abundance and excellence as to be looked upon by our people as a useful and necessary commodity, while to our friends in all other portions of the Union it is regarded in the light of a luxury, and as such, are transported by the carload to every city of importance in the United States. The articles of potatoes, cabbage, onions, etc., are sent to Chicago, New York, Philadelphia, St. Louis, Kansas City, Omaha, Denver, New Orleans, Galveston, etc., in carload lots, which, at the end of the season, count up into the hundreds.

These facts readily demonstrate the claims of Sacramento City and county for excellence of climate, magnificence of products, and facilities; and the progressive spirit which animates her people in the earnest desire to promote and strengthen our interests, resources, and advantages. With the immense acreage of fruit and vegetables now in bearing, and the acquisition of numberless new orchards, vineyards, and farms, it is a safe prediction that within a few years these industries will finally supersede all other pursuits wherein the question of soil and climate are concerned, and practically and forcibly perpetuate the reputation that California now enjoys—as being the “garden State of the world.”

SACRAMENTO AND ADJACENT COUNTIES.

By GEO. W. HANCOCK, Director of the State Agricultural Society.

Sacramento County is the most peculiar in its character of the counties of California. Formerly it was a fine stock county, with herds of cattle and bands of horses roaming at will over its plains and rich bottom lands. But when these large stock interests retired before the varied branches of agriculture—general farming, fruit growing, and market gardening—Sacramento County was tried in a furnace of fire. It has never proved to be a successful section for the production of cereals when compared with the counties of Sutter, Butte, Tehama, Colusa, and Yolo. While it is true that none of the counties named have so much first-class bottom land, it is also a fact that they have an even grade or average of land that returns a good profit to all who till the soil within their bounds.

While it is also true that no other section of the State is so well supplied with water readily available for purposes of irrigation, yet it has been allowed to run idly to the sea, except in a few instances of individual effort. There is no other locality in the State where the soil will respond so bountifully when irrigated, as the upland districts of Sacramento County, and there is no other section where one system of irrigation will cover so much territory with an abundant supply at so small a cost. The American and Cosumnes Rivers traverse the county from the hills on the northeast, to the Sacramento River on the southwest, carrying a volume of water that will, if used upon the land, treble the product of every acre in the upland section of the county. On the Sacramento River the land is so rich and moist that irrigation has never been a necessity. Twice in the American history of California it might have been applied to advantage, by placing pumps on the river bank and raising the water from that inexhaustible stream. By that simple means every farm could be irrigated at a cost that, when considered in a fruit crop, would not be appreciable in the expense account.

Hops have been a remarkably remunerative crop in Sacramento County. The hop lands border on the American, Cosumnes, and Sacramento Rivers. A. Menke, on the American River, boasts of the largest hopyard in the world—the annual yield of which often reaches three thousand pounds per acre, and \$80,000 worth have been produced from fifty acres in one crop.

Alfalfa is another crop that is exceptionally profitable as a forage crop on the bottom or irrigated lands, often producing ten to fifteen tons of cured hay per acre. In using the crop for pasturage it has kept fifteen to eighteen head of sheep to the acre for eight months of the growing season, and has been known to keep more than one horse per acre where several hundred run in a band the whole year round.

Sacramento is essentially a fruit county of the most varied capacity. Strawberries, raspberries, blackberries, cherries, apricots, plums, prunes, peaches, pears, apples, raisin and table grapes, nuts of every variety, figs, oranges, lemons, limes, and pomegranates, all grow and produce in luxuriance and abundance. Other localities may fairly rival us in the production of some of these fruits, but we produce them all in the utmost perfection, and every acre of land in Sacramento County—except the swamp and overflowed area—is first class fruit land, with or without irrigation.

There is here and there a thermal belt or a fruit section, but it is one grand whole, every twenty acres being capable of supporting a family in

competency if judiciously planted and thoroughly and properly cultivated. Planted in the fruits above named, the lands of Sacramento County, in the past and present, have returned and will return \$200, \$500, \$1,000, \$1,500 and more per acre per annum. It has been practically demonstrated that one acre of Bartlett pears near Sacramento City brought \$1,500 for one crop, \$800 for the next, and \$600 for the next, yet the land had not been cultivated or the trees pruned in that time. It is also known that a young orchard of eighteen acres of Bartlett pears yielded \$500 per acre net per annum. The yield of the Natoma vineyard of table grapes in 1886 returned, exclusive of freight and commissions, \$270 per acre.

Sacramento County has two hundred thousand acres of land practically vacant, which can be had from \$25 to \$100 per acre, and which when planted to trees and vines, and in bearing, will yield an income on an investment of from \$500 to \$2,000 per acre per annum. Many choice improved places in this county cannot now be had for \$1,000 per acre. The production of fruit is becoming more and more a fine art. The condition in which it will reach an eastern market is an important consideration in its value. There it must be fair to look at, rich in sugar, and firm in its resistance to decay. Such fruit is produced in Sacramento County in greater uniformity and over a larger proportional area than in any other county. El Dorado, Placer, and Yuba have their foothill thermal belts, by no means meager or insignificant in extent and importance, and they are strong and consistent rivals of Sacramento as to attractiveness to the eye and shipping quality of their fruit. The plains section of Placer, Yuba, and Sutter will, in the future, develop into a rich raisin and table grape district.

To Placer County has already been awarded the credit of producing a raisin equal, if not superior, to the five crown De Hiser raisin of France, which until equaled here had no rival in quality in the world. The product of one acre irrigated of these raisins has been as high as \$600 per annum.

Sutter County being entirely a valley county, except the lone Buttes in its northern bounds, has also fine fruit and grape lands, the choicest fruit lands lying on the banks of the Feather and Sacramento Rivers. Sutter has spots of as fine fruit land as the State can boast of.

To the north of Sutter lies Butte County, one half mountain and one half valley. Its valley lands are among the best for general farming of any in the State. Butte can boast of the largest area of land covered with majestic oak timber of any valley county, and this timber belt will, in the near future, develop the very best fruit land. The fine orchard of General Bidwell and the extensive vineyard farms of Governor Stanford are within its bounds. They speak more than volumes of the productiveness of the Butte County fruit and grape lands.

To the north of Butte lies the County of Tehama, having within her confines the head of the Sacramento Valley. The lands on the east side of the Sacramento River stretch to the foothills, and are a close imitation of the oak park land of Butte County, but more even in their quality and better adapted to fruit culture. Returning south we will cross the river, and there we find a more varied quality of land, much of it needing irrigation to make fruit production most profitable. Tehama County is cut on both sides of the Sacramento River by small streams that flow from her hills to the great drain of the valley, and its lands are therefore susceptible of irrigation.

South of Tehama, on the west bank of the Sacramento River, lies Colusa County, the banner wheat county of the world. There very little attention has been paid to fruit raising as a source of income, yet there are large

portions of it that will be planted to orchards and vineyards at no distant day. The yield of wheat in Colusa County furnishes undeniable proof that its soil will liberally respond when planted to vines and trees.

South of Colusa lies Yolo. There is nothing that can speak in more affirmative language of its prosperity than the fact that Woodland, its county seat, is the wealthiest town of its size in the world. Yolo has some of the best raisin vineyards in the State, and also some of the choicest orchard lands.

All these sections are tributary to the business of Sacramento City, and that city will grow and prosper with their growth and prosperity.

There is no portion in California where land is so cheap, measured by its productive capacity, as in Sacramento County. There is no place where the excessive heat of the summer is covered by so few days as at Sacramento City. No other place has so many sunny days in a year. No other place in the warm sections of California is so nicely tempered with moisture, which cools the atmosphere without making it either chilly or muggy. There is no other place, where spring and autumn reach so far into the seasons of summer and winter. Northern California is the natural orchard and vineyard section of the world. The home-seeker has but to be judicious in his selection of locality and purchase, and then let him plant understandingly, and he is sure to gather an appropriate reward for his toil.

THE AGRICULTURAL RESOURCES OF SACRAMENTO COUNTY.

By P. E. PLATT, of the firm of W. R. Strong & Co.

There is no spot on earth where fruit culture can be carried on more profitably, where greater variety can be produced, or where crops are surer, than in that portion of the great Sacramento Valley occupied by the County of Sacramento. At least this is the candid opinion of the writer, who, after having spent fifteen years in the growing, packing, and shipping of fruits, to all the prominent cities of the east, from Sacramento City, claims to know whereof he speaks, and will endeavor to convince the reader of the truth of the broad assertions herein made. This he thinks can be done best by a simple recital of facts, which can easily be verified, and which speak for themselves.

Soil and Climate.—There are three principal qualities of land in this county; the river bottom land, the deep, rich, sediment deposit; a second bottom, which is a deep, sandy loam; and the red bedrock land of the plains; all of which are especially adapted to fruit of some kinds. It would be very difficult to name any product of the vegetable kingdom that could not be grown without irrigation on the rich river bottoms first mentioned, or with irrigation on the second named; while the red lands, owing to their shallowness, are not so desirable for tree culture: but berries of all kinds, and every known variety of the finest table grapes, do remarkably well on them. As the term is understood in the east, there is no winter here. The tender calla lily, as well as the olive, lemon, and orange tree, blossom or bears fruit in the open air during the so called winter months. Neither is the heat of summer oppressive. There are no sunstrokes; and the farmer finds no inconvenience by reason of excessive heat. This article is not intended as a treatise on climatology, and the subject is mentioned only for the purpose of showing why the fruit grower here has no waste time, but can, if he will, utilize every day of the year;

not only so, but he may actually gather fruit of some kind from his orchards, if not every day, certainly every month of the year. Let us contemplate for a moment the various crops that are now being successfully and extensively grown, and we will take them in order, commencing with the—

Winter Fruits.—These embrace oranges, lemons, pomegranates, olives, and persimmons, which all ripen during the months of November, December, and January. It has only been during the last four years that it has been generally known, even to our own residents, that the first two would do well here, consequently there are not a large number of bearing orchards to be found, but enough full grown trees exist to prove that they can and do thrive and produce fine fruit. The writer is personally connected with a firm that has brought to Sacramento County during the last three years over fifty thousand orange and lemon trees, and will bring here, in addition to those now growing in its own nursery grounds this winter, at least fifty thousand more. So great has been the demand for planting, in this district, that it is sure that in a few years orange and lemon culture will form an important part of our industry. The crop of oranges in Sacramento County this year, is estimated at one thousand boxes. Five years hence it may be fifty thousand boxes, and increase thereafter in like proportion. Oranges and lemons ripen here much earlier than in the southern part of the State. This fact may seem strange to many, but any who doubt it may prove it to their satisfaction very easily by comparing the fruit from the two localities in November. It is a fact, that the oranges of Sacramento and other central counties, are always sold at fancy prices long before any are received from the southern counties. This is an advantage which will be apparent at a glance. As to the quality: the writer, with others, in charge of the Citrus Fair exhibit from Central California, at Chicago, in the winter of 1886-87, was assured by experts, that no better oranges ever reached that market. They were compared with the products of Florida, Louisiana, and the Mediterranean, and suffered nothing by the comparison. The Japanese persimmon is the finest fruit of that family in the world, and grows here to the size of apples. Olives do well, and are being extensively planted. They are very profitable both for pickling and for oil. A grand opportunity is here presented for any one who will make a study of the business of raising olives, and who understands their commercial value. Samples of olive oil made in Sacramento County, and in the foothill region adjoining, were exhibited last year at Chicago, and were pronounced much superior to the imported article. The olive tree grows rapidly and bears prolifically; it is easily grown and very long lived. There can be no doubt that before many years the olives of California, like her raisins now are doing, will drive the foreign article out of the market. Olive culture, as well as orange and fig growing, is soon to be a leading industry in Sacramento County.

Spring Fruits.—We next come to the spring fruits, such as mature and are marketed in April, May, and June. These embrace strawberries, raspberries, blackberries, and cherries. Every acre of tillable land in Sacramento County will grow the finest strawberries in great profusion. This is a very profitable crop, and should be more largely cultivated. On the second year after the vines are set out a heavy crop may be gathered: and the fact that such quick results may be had, makes it a desirable crop. Less than five hundred acres are now cultivated in strawberries, whereas there is a market for the product of ten thousand acres at fairly remunerative prices. Raspberries do well here, as experiment has shown, and pay well. Blackberries are not so profitable, still they can be dried as well as

sold green, and will pay: while cherries have always made the grower splendid returns. This latter variety grows to the largest size here, and as it is early, and yields immense crops, our fruit growers have no cause to regret having planted cherry trees. The only wonder is that there is not more of them. Doubtless there soon will be, as there seems to be no danger of over-production of cherries, for the reason that there are so many avenues through which they may be disposed of. First, coming in early they find a good local market both in Sacramento and San Francisco, at good prices; secondly, they are of the finest quality for shipping, and many tons of them are sent out of the State daily during the season; and thirdly, the canneries will take all of certain varieties that can be grown.

Early Summer Fruits.—As he finishes picking his early fruits and collects the money for them, the Sacramento fruit grower finds he must keep right on with his early summer fruits, such as apricots, plums, peaches, pears, and nectarines.

The first peaches are ready by the last of May or the first of June. Apricots and the early varieties of plums about the same time: and it is now that the fruit crop proper is reached, and from May to October there is no cessation in fruit picking, packing, and shipping. To mention all the varieties of the above named species that are grown in this county, would require as much space as it is intended to devote to this entire article. So in passing we will simply draw attention to a few leading points. Peaches are very largely cultivated all over the county, but they reach their greatest importance on the bottom lands, along the banks of the American, Cosumnes, and Sacramento Rivers. From these districts alone hundreds of tons of fine, large, luscious peaches are marketed every day during the season. When the picking reaches its height no doubt as many as three hundred tons daily find a market, but this heavy supply only lasts a very few days.

Apricots ripen early, and while a limited quantity are shipped in a green state, the great bulk of this crop is either dried or preserved in cans, for both of which purposes it is unexcelled by any other fruit. Of all countries in the world California is the only one that has made a thorough success of the apricot. This seems to be its natural home, and in Sacramento County it reaches its very finest development in size, flavor, and productiveness. With the entire world for a market, apricot growing cannot fail to become a leading and profitable industry.

Pears are also a leading summer fruit. A large number of varieties are grown, among which may be named the Madeline, Bloodgood, Dearborn Seedling, Le Count, Beurre Hardy, Seckel, Beurre Clargeau, B. Bosc, Winter Nelis, etc., but chief among all is the world renowned California Bartlett pear. This pear has been shipped in great quantities from Sacramento City to every city of any size in the United States, and is as well known in New York, New Orleans, Chicago, and Minneapolis, as in San Francisco, or nearly so: hence a description of it here is unnecessary. Suffice it to say, that it embraces all the fine qualities that can be named in a pear. It grows on the rich lands of the Sacramento River in larger quantities and size than anywhere else in the world. Needless to say it has always been profitable in Sacramento County. The writer knows of instances where an acre of Bartlett pear trees have never failed during the last ten years to yield a net income of over \$500 per annum, and often as high as \$800 or \$1,000. These orchards are within a mile or two of Sacramento City, and can easily be found.

Plums are also very profitable. They grow to a large size, and as they keep well when properly handled, they are shipped in vast quantities to

the eastern markets every year. There are none like them in quality of size and flavor. Besides being shipped green, they are sold to canners in large lots and are dried in the sun, and sell well in this way.

Early in the summer also apples of various kinds are shipped from Sacramento to the States and Territories west of the Missouri. Apple culture has been neglected, but certain varieties are very profitable, and should be more extensively cultivated. Nectarines do well, but are not considered as profitable as other fruits.

Fall Fruits.—In the fall fruits we have apples, pears, grapes, quinces, prunes, and peaches. Of these we will refer to only two—grapes and prunes—the others having been already mentioned.

Sacramento County is preëminently the home of the grape. While it is true that grapes do well all over the northern and central part of California, yet it cannot be denied that on the red lands of the Sacramento plains they reach their highest perfection. The table varieties include the Flaming Tokays, the Muscat, Black Prince, Morocco, Emperor, Cornishon, and some others have always brought good prices for shipment to the East. These grapes are profitable at \$15 to \$20 per ton, but have usually sold at from \$40 to \$60 per ton.

French or petite prunes are becoming a leading fruit. They are remarkably prolific, and when cured, far excel in quality the imported article, and bring much higher prices. While German prunes are being sold in New York at 5 and 6 cents per pound, our Sacramento grown French prunes readily bring 10 and 12 cents per pound here for shipment East. The culture of the prune is simple. They do well in any land that is suited for plums, and there is no difficulty whatever to cure and prepare them for market. Fortunes can be made in this fruit beyond doubt. Raisins are easily cured here, the weather being very favorable, and no rains ever interfere with the drying process.

Sacramento as a Fruit Shipping Center.—We now reach an important feature in the fruit industry of Sacramento County, and one to which particular attention should be drawn. It may not be generally known, but it is a fact that nearly 90 per cent of the green fruit (other than oranges) that leaves the State of California for the Eastern States and Territories is shipped from Sacramento. It is true that other adjacent fruit districts supply some of this fruit, but it is shipped into Sacramento as the natural center, and here billed out to eastern points. The quantity grown in Sacramento County is large itself, and when there is added to this the product of El Dorado, Placer, Yolo, Solano, and other counties, the aggregate becomes something immense. To move the vast quantity of fruit, entire trains of ten to twelve, and sometimes more, cars each, are chartered and run almost daily during the rush of the business. These trains are run East on passenger train time, and at low rates of freight—still better rates being expected soon.

Besides these special fruit trains many carloads are dispatched daily on passenger and freight trains, and the fruits of Central California are now, as before stated, almost as well known in all the cities of the East as in Sacramento.

During the season just closing (October, 1887,) nearly three thousand carloads of fruits and vegetables have been shipped from Sacramento to eastern trade centers, and when this quantity is added to the immense amount consumed by local and San Francisco canneries, an idea may be had of the vast yield of the district tributary to Sacramento.

The fruit shipping industry is yet in its infancy, but may now be considered as in a healthy condition, and bound to grow to gigantic proportions.

As new railroads center here and fresh competition is added in the carrying trade, better facilities are afforded, quicker time and lower rates, the business will be found practically to have no limit: but, of course, much has yet to be learned and many improvements can easily be made.

As showing the importance to which the fruit shipping business of Sacramento has grown, the following, taken from the Chicago "Inter-Ocean" of October 25, 1887, is not out of place:

Sacramento has become the great fruit-shipping center of the State for the eastern markets, as the official figures abundantly demonstrate. During the year 1886 Sacramento shipped east in green fruit, twenty-six times as much as Los Angeles and San Francisco combined, and about nine tenths of the entire amount of California fruit shipped. The figures from the railroad companies' books show that San Francisco shipped 525,290 pounds; Los Angeles, 201,960 pounds; Sacramento, 19,440,180 pounds, which is certainly a substantial showing. * * * A good idea of the volume of the city's export business may be gained from the official figures of the Southern Pacific Company, which show that of the total 51,589,820 pounds of freight shipped over that road from the entire State during August of the present year, Sacramento shipped about one fourth.

Sacramento is, and will continue to be, the chief fruit-exporting market of the State. Its advantages in this particular are so pronounced and so firmly established, that the city can afford to ignore the claims and misrepresentations of all envious rivals.

The fruit shipped in 1887 will greatly exceed in bulk the shipments of 1886.

It may not be thought out of place here to enumerate other productions that are being found highly profitable in this county, as well as some that are just passing the experimental stage.

The Hop Culture.—The following from the pen of Mr. Daniel Flint, a leading hop grower of Sacramento, will be of interest:

Hop culture on this coast dates back to about 1858. Prior to that date most of the hops consumed came around Cape Horn, sealed up in tin cases. The first roots were imported by Wilson Flint, from Vermont, via the Isthmus. Hop culture developed very slowly, on account of the prejudice of the brewers against a hop that contained a much larger percentage of strength than the ones they had been accustomed to use. Hop dealers discouraged the use of California hops, because they thought it would interfere with their imported article. The brewers found after awhile that it did not take near as many for a brewing, and they must not be boiled or steeped as long as the eastern hop. Now an eastern or foreign hop is a rarity in this market. It was early demonstrated that the soil and climate of Sacramento County was unsurpassed for hop culture. Here, and the only place known, a crop of from one to two thousand pounds per acre can be grown the first year the roots or sets are planted. It is a common occurrence to grow two and three thousand pounds per acre, and in some instances four thousand pounds have been grown on an acre.

We have no frosts to affect them when in a dormant state in the winter, no vermin to affect them during growth, and no rains to destroy them during the gathering season.

We use the willow, madrona, and redwood hop poles, also the wire trellis for training. Most of the picking is done by Chinamen, a few Indians, and all the white help that will work. It is believed with our facilities and the great product per acre, that this coast can compete with the world in hop culture. The cost of picking green hops is from 80 cents to \$1 per hundred pounds. Twenty-eight to thirty pounds of dry hops are obtained from one hundred pounds of green. It is believed that hop culture will become one of the leading industries of this coast, and that she will gain the reputation and have the world for her market.

In 1880, California grew 8,540 bales; in 1881, 8,913 bales; 1882, 14,227 bales; 1883, 27,000 bales; 1884, 41,231 bales; 1885, 26,183 bales; 1886, 28,411 bales. A bale of hops averages from 180 to 200 pounds.

Alfalfa.—This excellent forage plant is one of the "main stays" of the California farmer. Nothing would compensate him for the loss of this crop. It is valuable for pasturage, hay, and seed. It is exceedingly vigorous, hardy, and prolific; remains nearly dormant during November and December, and with this exception grows the year round. Three to five crops each year can be cut, ranging from two to four tons each cutting per acre. The last crop is usually taken for seed, for which a good market is found, the seed yielding from \$30 to \$40 per acre. All kinds of stock do well on

it. Hogs fatten on it, and taken altogether its value is incalculable. The hay will sell at \$6 to \$10 per ton.

Beans.—Hundreds of carloads of beans are grown on the rich bottom lands of Sacramento County, and each year are shipped to the eastern markets. They are a very profitable crop, and a failure has never been known.

Figs.—Most any part of California will produce this fruit. On the banks of the rivers in the county under consideration, the fig tree attains to great size, and is remarkably productive. The common black fig requires absolutely no care or attention. The tree grows like the oak, and is equally vigorous and hardy. It attains a great size, and when covered with its large, green leaves, and rich, handsome fruit, is a beautiful sight. The first crop is usually sold green, but the second is allowed to fall to the ground, and when sufficiently dry the figs are thrown into sacks and readily command $3\frac{1}{2}$ cents per pound, at which price they are very profitable.

The Smyrna, or "fig of commerce," is now being introduced, and there seems to be no good reason why California may not in the near future supply the millions of pounds of this delicious fruit that are annually consumed in the United States, and which are now imported from Europe.

Nuts.—Almonds have long been found a reliable and profitable crop. The tree will do well on any land that will grow peaches, and as the crop is rarely light, and never fails, the grower has a sure source of income from a fine almond orchard. At 11 to 14 cents per pound, which is the ruling rate, they pay well.

Walnuts grow well here. The English soft-shell walnut has not been extensively planted, but enough are growing to demonstrate that it is a profitable crop. Mr. P. H. Murphy has an English walnut tree on his ranch on the Cosumnes River, in Sacramento County, that is thought to be the largest in the State. This, however, may or may not be true, but it is a monstrous large tree, and yields heavily of very fine quality. Black walnut trees are grown for shade and ornament. Peanuts of fine quality are extensively grown.

Broom corn is grown very extensively, as is also Egyptian corn: the latter making a good and cheap food for stock. Sweet potatoes do remarkably well, and are very largely cultivated by the Chinese, who also raise vast quantities of other kinds of vegetables. There is a grand opening for intelligent field gardening by skillful white growers. Cabbages, potatoes, onions, garlics, etc., find a good market through the States and Territories west of the Missouri River, and the growing of them cannot easily be overdone. Licorice is being successfully raised at Florin, in this county. The plant does well and may soon become a leading product.

No energetic man need fail to make a handsome profit, if, indeed, he does not secure a competency, in growing any of the varied products herein mentioned. In horticulture he will, of course, need to use judgment and intelligence both in the selection of suitable land for the particular fruit desired, and also in the varieties of fruit planted. It will be very desirable for him to consult some responsible nurseryman, of whom there are several in the county, as to the kinds of trees adapted to his land, and as to the varieties most profitable. Finally the natural beauty and desirability of this section as a home will impress the thoughtful reader, when he considers the varied products, the mild and winterless climate, and the location of the county. A celebrated writer, Mr. Benjamin F. Taylor, pays the following glowing tribute to Sacramento:

The valley of the Sacramento is a garden, and Sacramento is the "urbs in horto" of it. It is our first glimpse of the celestial flowery kingdom of the Christian world. Roses never die. Rare exotics that we at the East cherish as if they were infants, and bend over like new made fathers and mothers, are disstrained for conservatory rent and turned out of doors. The white dome of the State Capitol rises like a pale planet above the green surges and waving banners of semi-tropic luxuriance. * * * The orange blossoms are abroad and the fruit is as golden as the three pawnbroker planets, and as green as a walnut in its first round about, all at once. They that dwell here sit under their own vine and fig tree, and the palm waves over their heads. * * * Taste and wealth have conspired with nature. There is no fairer landscape between the tropics.

The same writer also finds in Sacramento a fit theme for song, when he writes the following, describing his impressions of the valley on descending from the Sierras:

We die out of winter in the flash of an eye,
 Into Eden of earth, into heaven of sky;
 Sacramento's fair vale with its parlors of God,
 Where the souls of the flowers rise and drift all abroad,
 As if resurrection were all the year round
 And the writing of Christ sprang alive from the ground,
 When He said to the woman those words that will last
 When the globe shall grow human with the dead it has clasped.
 Live-oaks in their orchards, rare exotics run wild,
 No orphan among them, each Nature's own child.
 Oh, wonderful land where the turbulent sand
 Will burst into bloom at the touch of a hand,
 And a desert baptized prove an Eden disguised.

The following notes on the cold wave of January, 1888, show that no such a polar current has visited this coast since 1854, which appears from the meager records obtainable, to have been, if anything, somewhat colder than the cold wave of January, 1888. The minimum generally in the Sacramento Valley was about 18°; and in the San Joaquin Valley, 12° to 18°. In the foothills, from 13° to 18°. South of Tehachapi, it ranged from 10° to 30°. It was also the coldest in Portland, Oregon, ever known: the thermometer fell to 2° below zero, Signal Service records. The lowest before this was 3° above zero, in January, 1875.

[From the "Daily Evening Bee," January 14, 1888.]

A LITTLE COLD WEATHER, BUT NONE THAT WILL DO ANY PARTICULAR DAMAGE.—DR. LOGAN'S RECORDED MINIMUM TEMPERATURE AGAIN REACHED.—SOUTHERN CALIFORNIA HAS NONE THE BEST OF NORTHERN.

On Thursday the sun came out bright and warm, and the streets were thronged with pedestrians clad in summer attire. The peddlers were abroad, merrily calling out: "Oranges, sweet oranges, 15 cents a dozen." and every one believed that the cold weather was over. Last evening, however, the "cold wave" returned, carried by a north wind fresh from the snow-clad Sierras. The wind was quite a vigorous one, and shutters and signs swung and banged during the night. The mercury took a dive toward the bottom of the thermometer, and the result was that when morning came there was a wintry aspect quite unusual in the northern citrus belt.

The sun came out clear and warm, however, and the frigidity of the atmosphere was soon modified, though pedestrians all during the day showed a preference for the sunny side of the street.

In the early morning there was ice on small ponds in the gutters and streets, and small boys gathered about the "smooth article" and gazed in wonder at the natural curiosity.

Coming at this season of the year, the cold snap has done no damage. In fact, judged from a hygienic standpoint, the desiccating north wind is a blessing, serving, as it does, to dry up and obliterate the germs which produce disease.

WHAT THE SIGNAL SERVICE OBSERVER SAYS.—HE GIVES SOME VALUABLE AND INTERESTING READING.

It has been said by some doubting Californians that Dr. Logan's minimum or lowest temperature of 19° during the cold winter of 1853-54 was not correct: that they did not believe that such a low temperature was recorded on that occasion. Let those persons hold their peace, for after a lapse of thirty-four years a second occurrence of such a low minimum temperature has made its appearance.

THE EARLY MORNING.

The Signal Service minimum thermometer at 4 o'clock this morning, was 24°, and between that time and sunrise, it had fallen to 19°, or exactly the same minimum temperature that Dr. Logan recorded in January, 1854. It is to be hoped that the doctor's record will no longer be disputed, for the above shows that he was a painstaking and careful observer during the early days, when nothing was thought of but gold, gold, gold: but the doctor found it cold, cold, cold, for that particular year.

EVERY THIRTY YEARS.

Dr. Bennett, of England, says that about once in thirty years there is an extraordinary cold wave blows down the Alps Mountains to the north of the great citrus belt and winter resorts of Northern Italy. These exceptionally cold waves come rushing down the cañons and kill all orange and lemon trees that are not planted in protected places.

COLD WAVES IN FLORIDA.

Florida has such cold waves at certain intervals. It will be remembered when the last one visited that State: the average newspaper man of California came out in learned and labored articles to prove that such cold weather blasts could not possibly occur in California, although Dr. Logan's record was before them.

THE THREE CITRUS DISTRICTS.

To-day's minimum temperature shows that the three great citrus districts of the northern hemisphere are alike liable, at long intervals, to be visited by an exceptionally cold wave; therefore, let us be charitable toward other countries that boast of citrus belts.

THE BEST IN THE WORLD.

We all know that this, our glorious State, is the most free, finest, and best in the known world. The Signal Service reports at 4 o'clock A. M., show an extremely high barometer, accompanied by a cold wave in Washington Territory, Oregon, and California: in California, a gale from the north has been blowing all night, which is, in a measure, the cause of this

extreme and very unusual low temperature at Sacramento, because it came directly off the snow and ice of the mountains, and moving so rapidly that it has no time to be warmed by slowly passing over the warmer region of the Sacramento and San Joaquin Valleys, but reaches us with almost the same breath that it left the mountains.

MINIMUM TEMPERATURE.

The minimum Signal Service temperature at 4 A. M. was: For Astoria, 14°; Portland, 6°; Roseburg, 2° below zero; Red Bluff, 20°; Sacramento, 24°; San Francisco, 32°; and Summit (7 A. M.), 12° below zero.

The temperature, wind, and weather, at 4 A. M., Pacific time, was: For Astoria, 14°, northeast and cloudy; Portland, 6°, east and clear; Roseburg, 2°, northeast and clear; Red Bluff, 20°, north and clear; Sacramento, 24°, north and clear; San Francisco, 32°, northwest and clear; Summit (7 A. M.), 12° below zero, northwest and clear; Salt Lake, zero, northwest and clear; Cheyenne, 6°, northeast and snowing; Denver, 14° below zero, northeast and clear; North Platte, 24° below zero, north and snowing; Omaha, 16° below zero, north and cloudy; Davenport, 12° below zero, northeast and cloudy; Chicago, 6°, southwest and clear; St. Louis, 10°, east and clear; Leavenworth, 10° below zero, north and snowing; St. Paul, 28° below zero, west and cloudy.

THE NORTH WIND.

The Signal Service reports show the north wind began blowing at 7 o'clock last night 18 miles per hour, increasing during the night to 36 miles, and blowing steadily from 22 to 30 miles per hour up to noon. The following figures show the actual number of miles the wind traveled during each hour, and the maximum or highest velocity for the same time, and was: From 7 P. M. to 8 P. M., 17 miles; highest velocity, 21 miles; from 8 P. M. to 9 P. M., 21 miles; highest velocity, 24 miles; from 9 P. M. to 10 P. M., 27 miles; highest velocity, 30 miles; from 10 P. M. to 11 P. M., 27 miles; highest velocity, 30 miles; from 11 P. M. to 12, midnight, 28 miles; highest velocity, 30 miles; from 12, midnight, to 1 A. M., 32 miles; highest velocity, 36 miles; from 1 A. M. to 2 A. M., 28 miles; highest velocity, 33 miles; from 2 A. M. to 3 A. M., 27 miles; highest velocity, 36 miles; from 3 A. M. to 4 A. M., 31 miles; highest velocity, 33 miles; from 4 A. M. to 5 A. M., 28 miles; highest velocity, 36 miles; from 5 A. M. to 6 A. M., 30 miles; highest velocity, 36 miles; from 6 A. M. to 7 A. M., 28 miles; highest velocity, 33 miles; from 7 A. M. to 8 A. M., 22 miles; highest velocity, 27 miles; from 8 A. M. to 9 A. M., 26 miles; highest velocity, 30 miles; from 9 A. M. to 10 A. M., 26 miles; highest velocity, 30 miles; from 10 A. M. to 11 A. M., 23 miles; highest velocity, 30 miles; from 11 A. M. to 12, noon, 24 miles; highest velocity, 30 miles.

This makes a total velocity of miles from 7 o'clock last night to 12 (noon), to-day, 17 hours, giving an average hourly velocity of miles, and a maximum, or highest velocity of 36 miles per hour between 12 (midnight), and 1 A. M.; 2 and 3 A. M.; 4 and 5 A. M., and 5 and 6 A. M.

ICE IN THE RIVER.

Captain Foster, of the Steamboat Company, says this is the first time since 1854 that he has noticed ice floating down the Sacramento River. It has been floating down this morning, measuring about one sixteenth of an inch in thickness, and no doubt, these thin spiculæ of ice formed along

the shores of the American and Sacramento Rivers above this city, and by the force of the high northerly wind were broken loose from the shores, grinding them together and blowing them into the current of the two streams mentioned above.

HIGHEST AND LOWEST TEMPERATURE.

The temperature at 4 A. M. was 24°; between that time and sunrise it fell to 19°; at 8:10 A. M. it was 21°; at 9:20 A. M. 23.5°; at 10:25 A. M. 26°; at 11:30 A. M. 29.5°; 12, noon, 30°. The temperature, therefore, does not stand as high as the freezing point, which is 32°. Ice on the roof, in a tub thoroughly exposed to the full force and effect of the weather, was one and one tenth inches in thickness at 9:20 A. M., and at noon was the same. In fact, the hole that was cut to measure the ice was closed by a thin film of congelation.

ALONG THE RAILROAD LINES.—WHAT THE THERMOMETER SHOWED AT SEVEN THIS MORNING.

At 7 o'clock this morning the temperature was as follows at the railway stations indicated: Truckee, 25° below zero; Summit, 12° below zero; Cisco, 3° above zero, and six inches of snow; Emigrant Gap, 8°; Blue Cañon, 7°; Towles, 8°; Gold Run, 7°; Colfax, 16°; Auburn, 26°; Newcastle, 20°; Rocklin, 20°; Sacramento, 22°; Tehama, 34°; Nord, 17°; Chico, 20°; Biggs, 25°; Marysville, 20°; Lincoln, 20°; South Vallejo, 22°; Napa, 26°; Calistoga, 24°; Suisun, 26°; Elmira, 25°; Davisville, 24°; Woodland, 20°; Knights Landing, 28°; Dunnigan, 29°; Williams, 23°; Willows, 28°; Orland, 22°; Corning, 26°; Red Bluff, 30°; Wheatland, 24°.

NO DAMAGE DONE.—INTERVIEWS WITH VARIOUS FARMERS OF THE COUNTY.

As there was considerable speculation among Sacramento business men as to whether or not the prevailing cold snap will injure trees or vines, a "Bee" reporter was sent out to-day to interview farmers on the subject.

The first man struck was State Treasurer Herold, who is fresh from his ranch at Lincoln. He declares that no harm whatever has been done to trees or vines in that section. He says that on yesterday he saw as fine oranges as were ever grown taken from trees on a ranch adjoining his.

Hiram Johnson, of the Union House, regards the cold flurry as more of a help than injury to trees or vines. He says that he has observed that trees and vines do better after a cold winter. At this season the sap is in the roots where the cold does not penetrate. Mr. Johnson said that the cold will paralyze the codlin moth and other orchard pests.

Morris Toomey, of Walsh's Station, concurred in Mr. Johnson's remarks. He says that no harm has occurred to trees or vines out his way. He, too, believes that good will result from the cold, as buds will be kept back and kept free from being nipped by possible late frosts.

Hon. H. C. Wilson, one of the most extensive farmers of Tehama County, is in Sacramento. He says the cold weather, coming at this opportune time, has done no injury to trees or vines in his county.

Robert Williamson and Daniel Flint have just returned from making a thorough investigation of the orange and lemon orchards of Placer County. They report that no damage whatever has been done there, except that in a few places the new growth of young orange trees has been nipped by the

frost. Mr. Flint, who was an uninterested spectator except as to possible future investments, declares he was amazed at what he saw, as regards Placer County's capability for the culture of citrus fruits. He says that there are oranges on the trees now as fine as were ever produced in any country.

George Rich, whose farm is near the Lake House, and who is one of the extensive growers of citrus fruits in Sacramento County, reports that no harm has yet been done to his trees. His trees, he says, are seedlings, which are hardier than the budded fruit.

Hon. William Johnston, of Courtland, said that he does not grow citrus fruits to amount to much, but he expressed the opinion that the cold weather is a good thing for deciduous fruits and vines, as the insects can't stand it. He was willing to give up his orange trees if the cold will kill the insects.

J. Reith, who resides on the Lower Stockton Road, was also positive that no harm would result to trees or vines from the cold weather, as the sap has not started. He said that grain might receive a setback, as it looks somewhat wilted.

John McNie, of Florin, said that no harm at all would be done to trees, vegetables, etc. If it froze again to-night, young orange trees might be set back, but the others would not be hurt. In fact, fruit trees in general would be benefited, because it would put them back, and retard the buds from coming out too early in the spring.

[*"Daily Record-Union,"* January 16, 1888.]

COLD WAVE ONCE IN FORTY YEARS.—THE COLD WAVE OF JANUARY, 1854, ALMOST EQUALED BY THE PRESENT COLD SPELL.

For the second time in thirty-four years, an extraordinary cold wave is sweeping down upon the Pacific Coast. The Signal Service reports show the minimum or lowest temperature on Saturday and yesterday (Sunday) to have been 19°. It has not been so low as that before since January, 1854, when the same temperature was recorded by the late Dr. Thomas M. Logan, the then meteorologist of this city. For the sake of comparison, I visited the city's free library to find a copy of the old *"Sacramento Union"* for January, 1854, but there were no copies so early as that date, in the library, of that particular paper. There was a copy of the *Sacramento "Daily Democratic State Journal."* From the columns of its local news I find considerable very interesting reading, just at present, for the citizens of our city. If the dates were left out, the articles would very well refer to the present almost unprecedented cold weather. The articles copied from the above named paper, are as follows:

Saturday, January 7, 1854.—Yesterday was a clear, calm, cold day. We were shown ice yesterday morning, one and one quarter of an inch thick, the thickest ever seen, we believe, in Sacramento. The night of Thursday (5th) was unusually cold.

The following would do for a good description of the last three days of our present cold spell:

Monday, January 9, 1854.—The weather has been unusually cold, the past three days. Yesterday, in riding a short distance in the country, we noticed, as late in the day as 3 o'clock, ice in considerable quantities in the marshes by the roadside. Such an occurrence was never noted before.

To show that the cold wave of 1854 did not stop at Sacramento, the following article from the *"Democrat"* will prove:

Wednesday, January 11, 1854.—The Stockton "Journal" has been shown a piece of ice three inches thick, that was formed on Thursday (5th) night last.

The following certainly is applicable to our present cold spell: in fact, change the date to January 16, 1888, and the same words will apply to Sacramento now:

Friday, January 20, 1854.—This season is one of most extraordinary severity. From all we can learn never has its equal been known, even to that antiquated individual the oldest inhabitant. The ground yesterday morning (19th) was frozen at least two inches in depth, and ice was formed from one half to one and one half inches in thickness. Even the sun scarcely melted the ice, and the moment it ceased to shine upon any one spot freezing commenced. The air was clear, and the mountains loomed up, covered to an immense height with snow. Indeed everything looked and felt like winter. We hope such unpleasant weather will not continue long.

Boys were skating yesterday (January 15, 1888), back of the round-house. Read the following, dated Saturday, January 21, 1854:

SKATING IN SACRAMENTO.—The frost of night before last was by far the heaviest we have seen in this valley; the unplanked levee became as firm as the planked streets. Crystal formations were everywhere that damp had of late been, and to cap the climax, we beheld, when we arose yesterday morning, numerous little boys disporting themselves on a pond in Second Street, by cutting their names with their skates on the ice. How the ice got there we could account for, and where the boys came from we could imagine, but when we thought of the skates we came to a full stop. Whose speculative spirit thought of bringing skates to Sacramento?

Monday, January 23, 1854.—After a succession of most extraordinary cold days the weather moderated yesterday afternoon.

From the same paper and the same date I clip the following:

FROZEN OVER.—Sutter Lake was frozen over Saturday night and remained so all day yesterday; the ice was from one half to one inch thick. This never happened before—at least to the knowledge of any person now living in this region.

Tuesday, January 24, 1854. The Stockton Slough was frozen over on Saturday night (21st) so that the steamer Clay had to beat her way through the ice. The like was never before known in that vicinity.

Wednesday, January 25, 1854.—The suspension of heavy and hard frost for the past two weeks have enabled our waterworks contractor to proceed with the reservoir.

Wednesday, January 25, 1854.—The recent cold weather caused quite a rise in the price of ducks, geese, etc., owing to ponds being frozen over so as to prevent them getting their accustomed food.

The following notes must mean Nevada County and not the State of Nevada, for much colder weather than that is experienced in the Sage-brush State:

Wednesday, January 25, 1854.—The people of Nevada may well complain of the cold, as the following from "Young America" will show: On Friday last the thermometer stood at 2:30 o'clock A. M., 4° below zero; 5 o'clock A. M., 8.5° below zero; 9:30 o'clock A. M., 7° below zero. This, we believe, is the coldest weather yet recorded in California. Ice formed four inches thick.

The above numerous though brief notes from the "Daily Democratic State Journal," show that the cold spell of January, 1854, lasted upwards of two weeks. Although the paper did not give any temperature figures, we find, by referring to the record of Dr. Logan for that month, that he records a minimum temperature of 19°, which is our minimum for Saturday and yesterday. It can be safely said that we are liable to an extremely cold wave along the entire Pacific Coast of the United States, every thirty or forty years.

The average temperature on Saturday and yesterday, was 28°; Saturday being 18° colder than the normal for that day, and yesterday 17° colder than the normal. The highest and lowest temperature was, for Saturday,

38° and 19°, and yesterday, 37° and 19°, with high northerly winds on Saturday, and brisk to gentle northerly winds yesterday.

An abstract from Dr. Logan's meteorological table for the month of January, 1854 (taken from the "Daily Union" of January thirtieth), shows that during the week from the seventh to the fourteenth, the maximum temperature was 54°, the minimum 32°, and there were no rainy days during the week. From the fourteenth to the twenty-first, there were three rainy days. The highest temperature was 69°, and the lowest 32°; the prevailing winds being from the south and southeast. The following week the wind ranged from southeast to northwest, and there were two rainy days. The highest temperature was 49°, and the lowest 19°, on the morning of the twenty-first. During the last week the thermometer ranged from 56° to 28°, with two rainy days, and the prevailing winds were from the north and northwest. In his remarks Dr. Logan says:

The thermometer used for these observations is hung in still air of a northern exposure and protected from the influence of wind or sun. The observations are made at 8 A. M., 3 P. M., and 10 P. M. The minimum, therefore, which generally occurs during the night, has not been obtained. The degree of cold experienced during the month is unprecedented. Sutter Lake was frozen over on the sixth and on the twenty-first, and remained so all the day of the twenty-second. Ice formed in the city from the thickness of one to two and a half inches. The effect of such weather upon the health manifested itself in the extinguishment of intermittent fevers, which had been previously so prevalent, and an increase of catarrhal and other inflammatory affections of the respiratory organs.

ICE ON THE SLOUGHS.

Ice formed on Lake Como, alias China Slough, during the recent cold spell, to the depth of nearly an inch near the shore, and the whole surface of the slough was frozen over except a space of about eighty feet square near the eastern end. The mud-hens and ducks were forced into this small space, and consequently appeared more than usually numerous. The slough was never so nearly frozen over before; but in 1854, so says a prominent citizen and capitalist, the ice was much thicker near the southern shore, and afforded good skating for many people. The ice twenty feet from shore at that time was too thin to support a person, and thus the skaters were confined to a space about fifteen feet wide and nearly three hundred yards long. Last week ice about half an inch thick formed on the surface of the slough back of the roundhouse, and the north wind of Friday and Saturday blew water over it. The water froze almost immediately, and in a short time ice sufficiently thick to bear the weight of a heavy man was formed. Several parties who were so fortunate as to possess ice skates improved the occasion, and had a high old skating carnival. A short distance from the shore the ice was quite thin, but fortunately no one ventured far enough from land as to endanger their lives thereby, or to furnish the newspaper scribes with an interesting item.

Saturday morning thin pieces of ice which the stiff norther had broken off from the banks where the water was shallow, floated down the river, and was considered a great curiosity by the people. It was one sixteenth of an inch thick.

[*"Daily Evening Bee,"* January 18, 1888.]

FACTS ABOUT THE WEATHER.—A FORMER RESIDENT RELATES HIS EXPERIENCES IN SACRAMENTO.

Sergeant Barwick:

DEAR SIR: I noticed your report of weather statistics in Saturday's "Daily Bee," particularly the extracts from Dr. Logan's report of the weather for the winter of 1853 and 1854. Many times I have referred to

that winter in conversation with others, as the coldest I have ever experienced since my arrival in California, July 4, 1849, and a resident of Sacramento from the fourteenth of the same month and year until April, 1861, and in other places until the commencement of the present cold wave.

During the cold spell mentioned above, I was doing business at the Big Tree Store, corner of Eighth and J Streets, Sacramento. I have no recollection of the day or date of the commencement of the cold wave in 1854. I kept no record. There had been a fall of snow, leaving about two and a half inches on the ground, and the weather cleared up that night very cold. I usually opened the store in the morning before daylight. Having occasion for some water to wash myself, I went in the rear to the pump and caught hold of the iron handle. My hand clung to it; experience told me it required very cold weather to freeze a moist hand to cold iron. Having a thermometer hanging on the outside of the house facing the east, an examination of the same was made with a lighted candle. The reading was 18° above zero, or 14° below the freezing point. This would make it 1° below Dr. Logan's reading. It was all of two weeks before the snow disappeared from sheltered places.

It is now thirty-four years since that cold wave passed over this State, and I have not seen any winter to compare with it until the present one of 1888.

Another circumstance I will relate, during the cold weather of 1854. I have no doubt many old settlers are yet lingering in Sacramento who will remember the cake of ice I placed on my platform scales, in front of my store on J Street. My well water was hard, and would not readily remove dirt when using it. To obtain soft water I had a large hogshead placed in the rear of the store to catch rain water from the roof. It was facing the north, and so sheltered the sun never shone upon it. The first morning after the cold wave set in, I noticed the water frozen in the hogshead. I requested all of our folks in the store not to break the ice until the cold spell had passed over; every night the freeze added thickness to that ice, and continued nearly two weeks before the temperature moderated above the freezing point. Even the snow in the sheltered places lay on the ground during that time. With a crowbar I broke the ice in that hogshead, taking from it a large block and placing it on my platform scales in front of the store on J Street, and measured the thickness. The sides next to the hogshead were eight and a half ($8\frac{1}{2}$) inches thick, and the center six (6) inches. The winter of 1854 was the longest cold spell I have any recollection of, until the present winter. The highest and lowest temperature at Oroville during the present time, up to and including yesterday, the sixteenth, was 56° and 20° .

Yours truly,

HIRAM ARENTS,
Voluntary Signal Service Observer.

OROVILLE, January 17, 1888.

From the "Marysville Appeal," of February 8, 1888: The Redlands "Citrograph" remarks of Southern California, after the recent severe cold snap: "It has come out—not unscathed, as some of our over zealous brethren insist—but with a wonderfully small amount of damage." That's right. Tell the truth. Same here.

THE COLD WAVE.—RECORDS OF THREE SACRAMENTO OBSERVERS AT DIFFERENT POINTS IN THE CITY.

The following interesting tabulated matter during January last shows the lowest temperature recorded by self-registering instruments in different parts of the city. Captain Foster, of the steamboat company, has his thermometer at his residence, southwest corner of Eleventh and F Streets. It is a Green's standard signal service self-registering instrument, and is exposed under a grapevine arbor about five feet from the ground, in his back yard, the two-story house breaking (somewhat) the force of the north winds.

S. H. Gerrish's is a Sixe self-registering thermometer, manufactured by Hicks, of London, England, and is situated in his back yard, at No. 1817 G Street, being on the north side of the street. The thermometer is exposed to the full effect of radiation to the sky, there being no covering over it, and is in the back yard subject to the full force and effects of the north winds, which are cold in winter and hot in spring, summer, and fall. Mr. Gerrish's thermometer is about five or six feet above the ground.

The Signal Service thermometer is a Green's standard minimum, self-registering instrument, exposed on the roof of the Signal Office building, at No. 117 J Street, sixty-one feet above the ground, and is in a single latticed shelter, Signal Service pattern. The wind blows through the shelter in all directions.

The table below shows that during the thirty-one days of January there were but two upon which each observer recorded the same minimum temperature, and singularly, too, the minimum temperature was the same on both the days, being 34° on both the twelfth and nineteenth. The wind was north, blowing nine miles per hour, and weather cloudy at 4 A. M. of the twelfth; and southwest, four miles per hour, and weather cloudy, on the nineteenth.

Captain Foster's record and the Signal Service record were the same on eight days, as follows: Twelfth, 34°; thirteenth, 32°; seventeenth, 22°; nineteenth, 34°; twentieth, 38°; twenty-first, 41°; twenty-third, 49°; twenty-fourth, 42°. There were but three days upon which the records of Mr. Gerrish and the Signal Office coincided, those being the twelfth, 34°, nineteenth, 34°; and twenty-second, 45°.

The average difference during the month was as follows: Captain Foster 1.8° lower than the Signal Service, 1.1° higher than Mr. Gerrish; while the records of the latter gentleman show an average difference of 2.9° less than the Signal Service, and 1.1° less than Captain Foster.

There were sixteen days in January that were cloudy at 4 A. M. The average minimum temperature for those sixteen cloudy days at the above hour, was: Foster, 39.9°; Gerrish, 39.8°; Signal Service, 41.6°—making the latter only 1.7° higher than Foster, and 1.8° higher than Gerrish. The fifteen days that were clear or fair at 4 A. M., show an average minimum of 26.9° for Foster, 25.3° for Gerrish, and 29.5° for the Signal Service, making the latter 2.6° higher than Foster, and 4.2° higher than Gerrish. The greatest difference (6°) between the readings of Mr. Gerrish's thermometer and that of the Signal Service, occurred on the seventh, eighth, ninth, and sixteenth. At each time the wind was from the north, and gentle in velocity, and calm on the eighth. The weather was clear each day.

The least difference was 1°, on the first, fourteenth, twentieth, twenty-first, twenty-fourth, and twenty-sixth. The weather was rainy or cloudy on each day, except on the fourteenth, when it was blowing briskly from

the north. There does not appear to be so much difference between the readings of the Signal Office and Captain Foster's, as there is between the Signal Office and Mr. Gerrish's records. It appears from the above comparisons for January that, as a general thing, there is a difference of from 1° to 6° in clear weather between thermometers five feet above the ground, and those located sixty-one feet above. The difference is greater in calm weather, or during light to gentle winds, and when the temperature is below the freezing point. The least difference in clear weather usually occurs when it is quite windy—that is, when the wind is fresh to brisk and high. In cloudy weather there is less difference than in clear weather, because the clouds reflect the heat back to the earth, and prevent the rapid radiation from all substances growing on the earth's surface, and prevents the heat from escaping so rapidly from the earth's surface by radiation.

This table of comparisons will give a good idea of the various currents of air throughout the city. The Signal Office being near the river (within one block), its minimum should be a little higher, while Captain Foster's is about fifteen blocks, or over a mile, northeast of the Signal Office, and on the corner of a wide street, while Mr. Gerrish's place of residence and observation are very nearly one mile northeast of the Signal Office, and are situated in the middle of the block.

COMPARISON OF RECORDS.

JANUARY.	Minimum Temperature by Captain Foster's Thermometer.	Minimum Temperature by S. H. Gerrish's Thermometer.	Minimum Temperature by Signal Office.	Wind Direction, Signal Service, 4 A. M.	Wind Velocity, Signal Service, 4 A. M.	State of the Weather Signal Service, 4 A. M.
1	39	39	40	S.E.	5	Light rain.
2	39	39	42	S.	1	Light rain.
3	40	40	44	S.W.	12	Light rain.
4	28	26	31	W.	5	Clear.
5	32	31	34	Calm.	0	Cloudy.
6	28	27	29	N.	4	Cloudy.
7	22	20	26	N.	6	Clear.
8	20	18	24	Calm.	0	Clear.
9	21	19	25	N.	4	Clear.
10	24	22	27	Calm.	0	Clear.
11	25	24	28	N.W.	2	Clear.
12	34	34	34	N.	9	Cloudy.
13	32	29	32	S.E.	7	Clear.
14	20	18	19	N.	27	Clear.
15	18	16	19	N.	9	Clear.
16	19	18	24	N.	6	Clear.
17	22	20	22	N.	8	Clear.
18	22	22	25	E.	4	Clear.
19	34	34	34	S.W.	4	Cloudy.
20	38	37	38	S.E.	3	Light rain.
21	41	40	41	S.E.	2	Cloudy.
22	46	45	45	Calm.	0	Light rain.
23	49	47	49	S.	6	Foggy.
24	42	41	42	S.W.	3	Cloudy.
25	46	45	48	Calm.	0	Cloudy.
26	40	40	41	N.W.	4	Fair.
27	46	45	48	S.W.	2	Cloudy.
28	44	43	46	S.E.	3	Cloudy.
29	50	49	51	S.E.	6	Cloudy.
30	48	46	52	S.E.	5	Fair.
31	42	41	48	S.E.	3	Fair.
Average	33.9	32.8	35.7	N. & S.E.	4.8	

RESOURCES AND CLIMATE OF SOLANO COUNTY.

Solano County occupies almost the central portion of the State. It lies between 38° and $38^{\circ} 30'$ north latitude, and between $121^{\circ} 30'$ and $122^{\circ} 30'$ longitude west from Greenwich.

The boundaries are: Yolo and Napa Counties and the Rio de los Puntos on the north; Yolo, and the Sacramento River on the east; Sacramento River, Suisun and San Pablo Bays, and the Straits of Carquinez on the south; and the Sycamore Hills and Blue Mountains on the west.

The county comprises about 576,510 acres, according to the reports of the County Surveyor. The estimates of the swamp and overflowed land varies from 90,000 to 100,000 acres, leaving about 450,000 acres devoted to cereals, fruit, and stock ranges.

CLIMATE.

The climate of Solano is a benediction. It is an equable mean between the colder north, and the heat and humidity of the lower south. The summers are long and genial, and the bright, breezy days, and cool, restful nights, are the delight of our people. The rarity, crispness, and tone of the atmosphere; the freedom from malaria-breeding swamps; the peculiar conformation of the country, by which a perfect system of drainage is natural and easy, give the people of this section the highest measure of health and longevity known in California. Epidemic disease, either among men or animals, is rarely known, and the dry, equable climate is almost a certain cure for asthma or other bronchial affections. No pen or pencil can give adequate portraiture to the topographical charms of this region. In fact, the climate of Solano is her one distinguishing feature. It gives her a value that no other portion of the earth's surface can surpass. It makes her agriculture the richest, and in time it will be the most diversified in California. It will some day secure to her orchards a great monopoly of the most valuable horticultural products. It enables her horticulturists to group together the choicest collection and the greatest variety of the fruits of temperate and tropical regions. We have but little fog, no thunder storms, lightning, or tornadoes; no cyclones, no earthquakes, no blizzards, no sleets, no snow-drifting storms, no scalding heat in summer, or freezing weather in winter. The wet and dry periods come with such regularity that the farmer knows just how to provide for them. He sows his seeds and cultivates his land with the positive assurance that the rain will come to sprout it, and the sun will shine to warm it into life and cause it to grow luxuriantly. When the grain is ripe it can be harvested and left exposed in the open air for a stated period, with the absolute certainty that it is not endangered by any unforeseen inclemency of the weather. And when winter comes, it is only so in name, and called such in order to distinguish different periods of the year. It is not such weather as interrupts farming operations and starves and kills stock. In fact, the year is simply a succession of delightful variations of a deliciously mild and wonderfully invigorating climate.

Indeed, there is no section of the county that has a distinctive winter in its climate.

The average summer heat is about 80° Fahrenheit; the average temperature in winter is about 60° . The extreme heat is 110° , and the extreme cold, 20° . Ice rarely forms, and during a period of eighteen years, snow has fallen but twice. It should be borne in mind, however, that with the

thermometer ranging above 100° there is no such thing as a sunstroke. During the warm period, the atmosphere and soil are both dry, hence a heat of 100° is not so oppressive in Solano County as is a heat of 75° in the Eastern States. A climate that will admit of an open-air life the whole year round, is a peculiar advantage, that Solano can lay claim to in an eminent degree.

HEALTHFULNESS.

There is no section of the State that surpasses Solano County, from a sanitary point of view. The reports of the State Board of Health, as well as the opinions of the most eminent physicians, justify this assertion. From a bulletin issued in 1881, it is learned that Vallejo is the healthiest city in the United States, and the balance of the county is equally as healthy. There is no malaria, no miasma, and but few cases of asthma and catarrh. People suffering with pulmonary diseases have been greatly relieved by the climate of this county. In fact the climate and temperature are conducive to the enjoyment of perfect health, and these are considerations that cannot be overestimated by the thousands of immigrants now seeking homes on the Pacific Slope.

RAINFALL.

An idea can be formed of the amount of the rainfall in the agricultural and horticultural districts, by making comparison between Dixon, Vacaville, and Suisun.

At Dixon, during the winter of 1878-9, the rainfall was 17.85 inches; the next winter it was 15.35 inches; the following winter, 21.54 inches; and the next winter, 10.24 inches; and in 1882-3, 13.24 inches; making an average, for five years, of 15.64 inches per year. At Vacaville, the average for the same period is 30.3 inches per year. At Suisun, the average is 20.5 inches per year.

Water is easy of access all over the county. In the southern and middle portions there are numerous mineral springs, two of which, the White Sulphur Springs, in the vicinity of Vallejo, and the Tolenas Springs, near Suisun, have already attracted much attention, and promise to become famous as places of public resort. In northern Solano there are no streams that run the year round, except Rio de los Putos, the boundary. An abundance of good water can, however, be obtained by boring, and the average depth is about twenty feet, though the purest and softest water is obtained at a depth of seventy to ninety feet, according to locality.

The State of California has the most remarkable climate of any subdivision of the known world; and it may truthfully be added that no province has such a diversity of climate. The solar heat, the ocean currents, the trade winds, and the configuration of the mountains, operating with each other under a great variety of circumstances, are the responsible cause for the checkered climatic condition of the Pacific Coast. Suisun Valley stands directly in the path of the inland trade winds which, for eight or nine months, blow gently inland and northward, supplying the vacuum created by the uprising of the heated air of the great Sacramento plains. At this distance from the sea these winds are strong enough to beat back the hot breezes of the Sacramento Valley, and the result is that the climate is one of great evenness, with no extremes of chilly coldness or enervating heat. To this favorable climatic condition may be added another desirable fact, that Suisun and its surroundings is scarcely ever visited with sea fogs which operate so much to endanger health, spoil ripening fruits, and mil-

dew growing grapes. The records of the State Board of Health show that Solano County is one of the healthiest counties of the State, and Suisun and its environing valley stands at the head of the health list of the county. It is only necessary to mention one fact in connection with this subject. The Suisun City public school has had an average daily attendance of one hundred and fifty scholars for the past thirteen years, and during that long period it has lost only one pupil by death. The hygienic annals of the world are challenged to show a parallel example of freedom from disease.

VALLEJO'S CLIMATE.

The climate of Vallejo is unexceeded. Statistics bear us out in the assertion that a more healthy locality does not exist within the limits of the State, if at all.

During the year 1880 sixty-eight cities of the United States made weekly death reports to the National Board of Health, and in its bulletin of February 18, 1881, the Board aggregates and tabulates the contents of the reports, exhibiting results for the year. From this table it appears that Vallejo was the healthiest place reported in 1880, and Norfolk, Virginia, the unhealthiest. The average life in Vallejo was 83.5, and only one in its entire population died of consumption, while in Norfolk the average life was 27.9, and one in every two hundred and forty-nine died of consumption.

The same delightful, healthy climate we had in 1880 we have now in 1887. The sea breeze is daily wafted to us direct from the bosom of the Pacific. With no intervening swamps, or malaria-infested district, over which to pass, it comes to us pure, exhilarating, and health-giving. It is the genial, balmy, bracing climate—in short, the glorious climate that induces the thousands upon thousands of people from the East and all other parts of the world to leave their homes, their kindred, and old associations to seek for health and comfort. A most remarkable feature of our climate is its uniformity. January is nearly as warm as July. We have no decided winter, no ice, little frost, and seldom, if ever, snow. From October to May we have occasional rains, and sometimes a shower in June or September. From December to June is spring, the rest of the year is like autumn, and the days in January or July are much like the warm days of April or October in the Middle States. It is an agreeable climate all the year round.

CLIMATE OF BENICIA.

The climate of Benicia is not surpassed by any locality on the continent; snow has fallen but three times in forty years, and then not to exceed three inches, which melted in a few hours. The thermometer ranges during the winter from 30° to 65° above zero, and from 60° to 90° in the summer. Owing to the comparative dryness of the air, the higher degrees of summer temperature are far more readily borne than in the Atlantic States. Work never has to be suspended on account of heat, and through the greater part of the summer, the cooling breezes from the ocean temper the atmosphere, and save us from the high temperatures of the interior valleys. Besides this, it is noteworthy, that whatever may have been the heat of the day, the nights are cool, and bring refreshing sleep, and a covering of blankets is needful.

This feature of cool nights during the warmest summer months, is common to a large part of California, but is well marked at this place.

Obversely, the lower degrees of temperature are far from the rule in

winter. The average for the winter months during the daytime being about 50° or 55°.

The healthfulness of Benicia is proverbial. While it is hardly possible to state exactly the death rate of the population, because statistics for a number of years are not available, yet recent inquiry shows that it can vary little from thirteen per thousand, a rate surprisingly low, even for a village. Besides, even this statement does not correctly set forth the facts, because the place has always had a remarkable exemption from epidemic diseases of every nature, and even when they appear, they quickly die out.

Perhaps no more instructive statement could be made than the following: During this summer there have been, so far as can be ascertained, but three cases of summer complaint or cholera infantum, and but one death from such a cause. While fine climate is a heritage of a large part of California, few places can show such proofs of healthfulness as Benicia.

VACAVILLE—CLIMATE, ETC.

Vacaville township is the political subdivision of Solano County, occupying its extreme northwest corner. It lies along the eastern slope of the main chain of the Coast Range, commencing at the southern extremity of that portion of the range which bounds the Sacramento Valley on the southwest, and extending northerly to Putah Creek, a distance of fifteen miles, with a width from east to west of about six miles.

The summit of the Coast Range bounds it upon the west, while its eastern border is formed by the western line of the great Sacramento Plain. It comprises Vaca, Laguna, and Pleasant Valleys, and the foothills of the main Coast Range which surrounds them.

It contains some sixty thousand acres of land, of which fifty thousand acres are susceptible of cultivation, and the remainder is of value for mountain pasture. One fifth of the land is mountainous, rising in places to an altitude of three thousand five hundred feet; two fifths are composed of low rolling hills, eminently adapted for horticultural purposes, and the remaining two fifths are small, level valleys, of which the Vaca is by far the largest and most important, containing some six thousand acres.

The soil upon the hills is generally a light, sandy loam, formed by the disintegration of the sandstone bedrock, which underlies the whole region, mixed in places with decayed basaltic rocks, which radiate in the defined lines of ancient lava streams from Putnam's Peak. This is an old volcanic formation, rising to an altitude of one thousand five hundred feet from the low foothills at the head of the Vaca Valley.

The soil of the valleys is an alluvial deposit from the hills, and composed to an enormous depth of similar materials. No portion of the township is of a lower altitude than two hundred feet above high water, and the average elevation of the low hills and cultivated mountain slopes is about four hundred feet.

The climate of Vacaville Township in the winter rarely reaches a temperature of 30°, and the lowest recorded is 21°. This is largely due to its elevation above the sea level, and to the shelter afforded by the surrounding hills against chilling winds. Tomato vines frequently remain green and growing the entire winter, and grapes have remained on the vines in palatable condition till late in January. But perhaps its extremely mild and equable character may best be expressed by saying that the orange thrives here as in its native home. William Pleasant, a prominent horticulturist, says: "I consider, after an experience in fruit culture at Vacaville of twenty-five years, that the Vaca Valley is better adapted to the

culture of the orange than any other fruit tree. It is quite as much at home as the apricot or the peach, and requires much less attention in the way of pruning."

But while the winter temperature is perhaps higher here than at any other point in the world in this latitude, the rainfall is heavy. According to the rain tables compiled by A. Montpellier, of the Granger's Bank of San Francisco, and confirmed by the statistics in such matters accumulated by the Southern Pacific Company, the rainfall at Vacaville exceeds that of any other agricultural point in the State of California, the average being some 32.50 inches. This heavy rainfall is confined to Vacaville Township, and is nearly double the rainfall at any point in the Sacramento Valley, and nearly three times the average precipitation in either the Santa Clara or San Joaquin Valleys.

The spring climate of this district is *sui generis*. Owing to the elevation and the peculiar configuration of the hills, gentle and continuous air currents are produced, which ward off frosts. In consequence of this, vegetables are planted, fruit trees blossom and leaf out in Vacaville Township weeks before the frost will allow any exhibition of vegetable life in closely contiguous localities, or in fact at any point upon the same meridian five hundred miles further south. In consequence the grape grower here is sure of his vintage, and the horticulturist of the earliest harvest of any place in the United States.

The cherry ripens here as early as the last of March, the apricot by April twentieth, and the peach by the first of May. Here dates are earlier than similar fruits will ripen in the open air at any other place in the United States.

The early ripening of fruits, which adds so enormously to the wealth of this section, has been traced to different causes, but observers are by no means agreed. Some think our excessively mild winters, and warm springs, and warm air currents, force the vegetation. In the absence of accurate meteorological data, on the other hand, it is contended that Vacaville is not to be compared with Sacramento Valley or Los Angeles for high heats in summer, and inferentially in winter. Others contend that the peculiar composition of the soil forces vegetation with abnormal rapidity. Other observers assert that there is some influence forcing vegetation not explained by any known difference either in temperature or the soil of this section, and depending upon the ozone in the atmosphere or upon its peculiar electrical conditions. But whatever may be the cause, the interesting fact remains that while the great interior valleys can show everywhere a far higher summer temperature, and hundreds of places in California a higher average temperature, a small section in Vacaville Township is from two weeks to two months ahead of any point from Shasta to San Diego in reaching the fruit and vegetable markets with matured produce.

The summer climate here is a happy medium between the cold winds of San Francisco and the hot suns of Sacramento. The trade winds, filtered through the cañons of the Coast Range, and broken and warmed in their passage, blow nineteen days out of twenty in the summer time, and produce a climate healthful, bracing, and agreeable. When these winds do not blow, and the air currents set from the north, or hot interior, the days are marked as our days of disagreeable high temperature, when the thermometer reaches 108° or 110° in the shade. Such times are rare and of short duration. Fogs are of rare occurrence in the winter, and are never known at any other time, the high wall of the Coast Range effectually barring them out, though often for days in succession they roll up from the coast to the very summit, and are there dissolved in the warm air rising up the eastern slope of the range.

In short, the climatic peculiarities of Vacaville Township, as compared with other portions of California, are: First, a very high winter temperature; second, an enormous rainfall; third, a very warm, frostless, and extraordinarily early spring; fourth, a fogless summer, rendered tonic and bracing by the almost continuous trade winds from the ocean.

HEALTH.

The foregoing climatic conditions, with the excellent drainage afforded by the hilly and mountainous profile of the country, of course render this a healthy location. This feature, always recognized by resident physicians and observers since the settlement of California, has recently been accented and made prominent by the action of the medical faculty of the State. Dr. Trembly, of Oakland, in the report of the Committee on Health Statistics and Health Resorts, read before the Medical Society of California, at San Francisco, in May, 1887, says: "A careful comparison of the death rate, compiled at all prominent points, show that it is lower in the foothills of the Coast Range northeast of Benicia than anywhere else in the world. There is a total absence of malaria, and of violent climatic changes, and absolutely no local causes for disease." The local physicians, Drs. Stitt and Cunningham, of Vacaville, indorse the above, and add that in Vacaville Township the death rate from all causes does not exceed three per thousand, a rate hitherto unheard of in the health records of the world.

Patients suffering from bronchial affections in the hot interior, or troubled with asthma on the coast, experience relief almost at once from this climate. All lung diseases, except advanced stages of consumption, are cured here, and even cases of the latter disease are benefited and temporarily relieved. But the fact recently discovered by Dr. Trembly and communicated to the medical faculty of the world, that in a State noted for its healthfulness this was the particular section where the death rate was the lowest, and the surroundings for health the best of any place in the world, will no doubt make Vacaville the Mecca towards which the sick and afflicted will turn their footsteps from all over the world.

Vacaville Township has long been the hothouse for California, and doubtless it will soon become its sanitarium as well. Indeed, may there not be an intimate connection between the causes which fit this section for such dissimilar but important offices.

The influences, whether solely climatic or whether arising from the dissimilar distribution of ozone or electricity in the atmosphere at this point, which causes the early ripening of the fruits, and imparts such vigor to the germ of all vegetable life, may indeed operate to fan and feed the vital flame in human kind, and build up the shattered constitution, insure health, and prolong life. At all events, they are well established facts, apparently produced by climatic reasons, equally agreeable and profitable to the people of this section, that Vacaville has the earliest fruits and the lowest death rate of any place in the United States.

The great development of the fruit industry of Vacaville has been caused by the fact that fruit growing here is more profitable than anywhere else in California. Owing to the favoring climate and kindly soil, the fruit crop of all varieties is a certainty in this locality, and the yield can nowhere be exceeded, as much as ten tons of table grapes per acre having been harvested from vines only three years old. The quality for shipping or canning is unapproachable elsewhere, and being placed on the market from two weeks to two months sooner than the produce of other localities, the grower receives from fifty to one hundred per cent greater price per pound than his less favored competitors in other districts.

In a word, the Vacaville horticulturist is a manufacturer who has all the facilities for production possessed by others in his line, and is at the same time assured by his location double the market price for his commodity that his rivals may hope to obtain. Tartarian cherries, June 17, 1887, quoted in San Francisco, at from 25 to 35 cents per box, sold when the Vacaville grower was marketing his crop, at from \$1 50 to \$2 50 for the same sized packages.

What has been said of the early ripening of fruits and the high prices paid for the first arrivals applies with equal force to vegetables. A large area in Vacaville Township is devoted to market gardens, and several hundred carloads of beans, squashes, tomatoes, and green corn, are annually shipped to all points in California and the East.

Next to fruit growing ranks the growing of "garden truck," both in importance and profit. Because of the small outlay necessary, the business is very attractive to men of small means, and the foundation of many handsome fortunes have been laid, by the crops from a few acres. On account of the high prices realized, the business is altogether different from the raising of "garden sass," where it is more trouble to sell than to grow it, when the "truck farmer," poorly paid, becomes, also, a peddler; but here all is changed. Even the homely and prosaic potato called early from its little bed and marketed by the Vacaville grower for shipment to Chicago or Portland, at five cents a pound, becomes invested with quite a sentimental glamour.

RAINFALL AT VACAVILLE, SOLANO COUNTY.

The following table of rainfall was furnished by Mr. A. V. Stevenson, and shows a record of rainfall by months, years, and seasons, from 1880 to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1880...	3.48	2.28	2.73	8.26	7.58	1.78	none	none	none	none	.07	21.25	47.43	1879-80	36.81
1881...	15.61	4.58	1.13	2.36	none	none	none	none	none	.28	1.93	5.36	31.25	1880-81	45.00
1882...	2.76	3.38	4.17	2.37	.19	none	none	none	1.10	3.11	3.77	1.15	22.00	1881-82	20.44
1883...	2.45	2.11	6.26	2.03	5.63	none	none	none	none	2.24	.49	1.63	22.84	1882-83	27.61
1884...	6.02	7.19	11.45	7.48	.24	none	none	none	.41	1.20	none	16.18	50.17	1883-84	36.74
1885...	1.89	.28	.28	1.54	none	none	none	none	none	.30	15.98	5.68	25.95	1884-85	21.78
1886...	8.74	.17	1.32	4.84	.05	none	none	none	none	.27	.14	2.26	17.79	1885-86	37.08
1887...	1.34	9.40	1.06	2.65	none	none	none	none	.16	none	1.01	5.62	21.24	1886-87	17.12
1888...	6.34													1887-88	*13.13
Totals	48.63	29.39	28.40	31.53	13.69	1.78	none	none	1.67	7.40	23.39	59.13	238.67		242.58
Av'g's	5.403	3.674	3.550	3.941	1.711	.222	none	none	.209	.925	2.924	7.354	29.834		30.322

* Up to February 1, 1888.

Average Rainfall in Solano County.

	January	February	March	April	May	June	July	August	September	October	November	December
Benicia	2.92	2.21	2.33	1.48	0.37	0.17	0.01	0.01	0.05	0.54	1.42	3.20
Suisun	4.40	2.83	2.60	1.58	0.63	0.30	none	none	0.28	0.79	1.59	4.70
South Vallejo	3.04	2.12	2.18	2.02	0.57	0.23	none	none	0.09	0.70	1.24	2.36
Vacaville	5.40	3.67	3.55	3.94	1.71	0.22	none	none	0.21	0.92	2.92	7.35

YOLO COUNTY.

THE SOIL.

What is the character of your soil? is usually the first question a home-seeker asks. To this we respond that California soil is as varied as her climate. Even within the limits of Yolo County, half a dozen qualities of soil may be found, thus adapting this section to almost every industry desirable. The county may be subdivided for descriptive purposes into hill land, valley land, bottom land, and tule land. The valley land comprises the greater body, and is largely devoted to the culture of wheat and barley. This soil is principally a rich, deep loam, interspersed with adobe, easy of cultivation, and sure to produce an average crop. The hill lands are in the western part of the county. Until late years these broad acres were devoted almost entirely to grazing, but more recently the rich red soil and gravelly loam has been found to be excellent for the production of cereal crops, and to-day the foothills are considered with the best lands of the county for all productive purposes. Even the vine has encroached thereon, until some of our finest vineyards nestle in the little vales and along the hillsides of this region. The garden spot of Yolo is found to be hovering along the banks of Cache Creek and the Sacramento River. Here the rich alluvial soil may be seen in perfection. Anything in the vegetable line, including melons, peanuts, and sweet potatoes, flourish here. Small fruits, such as strawberries, raspberries, and blackberries, find an excellent home in this soil. Berries and the fruit trees of every variety grow here to such perfection as to challenge the rest of the world. If this land is objectionable at all, it is because it is too productive for the production of cereals, because of the excessive growth of the straw. Lastly, we come to consider the tule lands. These occupy forty thousand acres along the eastern border of the county, between the valley lands and the rich bottom of the Sacramento River. The tule lands, at certain seasons, receive the surplus water from the river and from Cache and Putah Creeks, and presents the appearance of a great lake. The wet season being ended, this water flows off rapidly with the Sacramento River, and the whole surface produces a luxuriant growth of tule, salt, and other grasses, and is used for grazing purposes for herds of sheep, cattle, and swine. These lands are doubly valuable for grazing, inasmuch as they furnish pasturage at a season when the grain fields and other pasturage have been eaten out. This brief resumé of Yolo County soil will be sufficient to show that the stranger may be accommodated, if soil alone is to be considered.

CAPAY VALLEY, YOLO COUNTY.

This delightful valley is to Woodland and Yolo County, what Pasadena is to Los Angeles. It is destined to become not only a pleasure and health resort for people from all sections, but it promises advantages of soil which few places of resort enjoy. This valley is twenty miles west from Woodland, on the road direct to Lake County and the timber forests of Mendocino. The valley is about four miles wide, and extends a little north of west, a distance of twenty-five miles. Cache Creek, a beautiful stream supplied with sparkling mountain water from Clear Lake, flows through the whole length of the valley, supplying abundant water with which every foot of land could be irrigated if considered necessary. The scenery along the banks of the stream is wonderful, and never fails to surprise the tourist,

who wanders from the old routes of travel, and changes his way into these almost unknown vales of beauty and natural grandeur.

A prolific growth of white and mountain oak, sturdy monarchs of the mountain and valley, grow even to the water edge. Willow and cottonwood are interspersed, while an occasional maple or sycamore adds variety to this arboreal scenery.

The hand of man has been present, and to nature's gifts have been added cozy cottages, small orchards, beautiful vineyards, and the ever-green olive and orange grove. The soil of this valley is equal to the best. The mountains on both north and south rise several hundred feet, shutting out all tempestuous windstorms, and secures for the valley an evenness of temperature that can scarcely be found elsewhere in California. Here the first fruit ripens: here the consumptive finds a dry atmosphere: here the afflicted with asthma, or catarrh, is free from vexatious fogs; here land is found above the frost line in spring time, and far below the possible limit of occasional snowstorms in winter. It may seem strange that nature and man should combine to do so much for one section, but it only remains for the visitor to come and see for himself.

When we say the rose blooms here twelve months in the year, and wild flowers are no strangers, either to winter or summer, we assert that which is susceptible of ready proof.

It must be particularly borne in mind in considering the climate of California, that the dryness of the atmosphere, except immediately along the coast, is its most notable feature. The dryness of the air in the great interior valleys of the State makes a temperature of 100° felt no more than 85° or 90° in States east of the Rocky Mountains, and no more than 85° or 90° along the coast of California as far as the fogs from the Pacific extend. It is very seldom that the thermometer shows a temperature of 100°; but such a temperature does not interfere in any degree with work in the open air, is not enervating in its influence, and cases of sunstroke are unknown, even under the highest temperature ever reached. The equability and dryness of the climate of California renders it especially beneficial to persons troubled with pulmonary difficulties.

The question of climate is one that no reasonable man will overlook. To many it is food, and drink, and medicine. Herewith we append a valuable table, reliable, because taken from the United States Signal Service Station:

LOCATION.	Average Annual Temperature—Degrees—	Highest Temperature—Degrees—	Lowest Temperature—Degrees—	Annual Number of Clear Days—	Annual Number of Fair Days—	Annual Number of Cloudy Days—	Average Annual Rainfall—Inches—
Red Bluff	62.3	110	19	226.1	83.8	55.3	28.85
Sacramento	60.2	105	21	242.0	73.9	49.3	19.83
Los Angeles	60.6	108	28	171.3	144.8	49.1	14.73
San Diego	60.5	101	32	122.7	155.1	87.4	9.51

RAINFALL AT WOODLAND, YOLO COUNTY.

After the consideration of soil and climate, very appropriately comes the rainfall. The greatest rainfall is experienced in the extreme northern part of the State. That portion joining Oregon has an annual average of

30 to 35 inches. As we come south, the average gradually diminishes until we find the average for the Sacramento Valley, proper, to be from 15 to 20 inches. This quantity of rain is generally about equally divided between the fall, winter, and spring months. The rainy season is what may be termed an open one: no extremes of cold, no ice, no snow, no frozen grounds. Seldom a day so unpleasant but that laborers can pursue their usual occupations dressed in ordinary apparel, coats and gloves being unnecessary as far as climate and comfort are concerned. The same is true of all California. As you extend your researches further south into the San Joaquin Valley, the rainfall continues to lessen, until in many sections irrigation becomes an absolute necessity. In the Coast Range and in the Sierra Nevada Mountains, the rainfall is large, probably averaging 30 inches. This furnishes abundance for the streams, which, when necessary, can be utilized for irrigating. Fortunately, however, Yolo County, though well adapted for being irrigated, requires but little such assistance, and that only for special crops, such as berries and alfalfa.

Below we append a table of the monthly rainfall at Woodland, since 1873, taken from J. B. Elston's record, which is the standard gauge for Yolo County:

Woodland's Rainfall for each Month, each Year, and Season, from 1873 to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season.
1873---	1.25	2.84	.56	.18	none	none	none	none	none	.20	1.15	16.44	16.62	1872-73	10.22
1874---	5.99	1.33	2.85	.64	.40	none	none	none	none	3.26	2.79	.16	17.42	1873-74	23.00
1875---	5.22	.35	.66	none	.15	1.59	none	none	none	.44	3.87	2.49	14.77	1874-75	14.18
1876---	4.40	4.85	4.24	1.40	.45	none	.16	none	.17	3.37	.27	none	19.31	1875-76	22.30
1877---	3.95	1.42	.77	.03	.53	none	none	none	none	.94	1.10	1.29	10.03	1876-77	10.51
1878---	11.52	7.61	2.30	1.25	.68	none	none	none	.25	.34	.88	.01	24.84	1877-78	26.69
1879---	2.62	3.25	4.48	2.40	1.70	none	none	none	none	.22	7.15	3.66	20.48	1878-79	16.23
1880---	1.33	1.22	.97	6.84	.28	none	none	none	none	none	none	8.73	19.37	1879-80	16.57
1881---	4.50	1.93	.97	1.39	none	.35	none	none	.50	.25	1.87	2.37	14.13	1880-81	17.87
1882---	1.24	1.87	2.34	1.51	.03	.07	none	none	.82	2.04	2.42	1.05	13.39	1881-82	12.25
1883---	.91	.60	3.24	1.22	4.65	none	none	none	.54	1.04	.30	.54	13.04	1882-83	16.75
1884---	3.67	4.07	6.53	4.63	none	3.62	none	none	.22	1.61	none	5.57	27.73	1883-84	22.75
1885---	1.62	.15	.15	1.50	none	none	none	none	.06	.05	9.14	2.73	15.40	1884-85	10.82
1886---	5.81	none	1.71	4.14	none	none	none	none	none	.59	none	1.39	13.64	1885-86	23.64
1887---	.88	7.56	.75	1.90	none	none	none	none	none	none	.60	3.67	15.36	1886-87	13.07
1888---	3.88	.97												1887-88	*9.12
Sums	58.79	40.02	32.52	28.43	8.87	4.04	.16	none	2.56	14.35	26.54	44.10	255.53		257.05
Av'g's.	3.674	2.501	2.168	1.895	.591	.269	.011	none	.171	.957	1.769	2.940	17.035		17.137

* Up to March 1, 1888.

Average Rainfall in Yolo County.

	January	February	March	April	May	June	July	August	September	October	November	December
Davisville	3.40	2.25	2.05	1.35	0.48	0.18	0.01	none	0.10	0.68	1.35	3.72
Dunnigan	3.47	2.15	2.49	1.71	0.85	0.38	none	none	0.19	1.04	0.93	2.26
Knights Landing	3.34	2.65	2.54	2.49	0.78	0.44	none	0.01	0.18	0.66	1.24	2.14
Woodland	3.67	2.50	2.17	1.90	0.59	0.27	0.01	none	0.17	0.96	1.77	2.94

SUTTER COUNTY.

By ALVAH PENDLETON, Voluntary Signal Service Observer at Nicolaus, Sutter County.

The following facts about Sutter County may be of interest, preceding the tables of meteorological data submitted herewith:

The area of Sutter County, in square miles, is six hundred and ten. It is entirely level and alluvial, with the exception of the Buttes—a singular group of peaks, which rise in the northwestern corner to the height of one thousand eight hundred feet. It lies between two great rivers of the State—the Sacramento and the Feather—and is also cut by the Honcut and Bear Rivers.

A large tract, and probably the richest portion of the county, lies to the east of Feather River, in which is situated Nicolaus, where these observations were made.

This town is situated on the east bank of Feather River, eleven miles above its mouth. Here was made by Nicolaus Allgeire, in 1842, the second settlement in the county, being preceded but one year by Sutter's establishment at Hock Farm. He built him a hut of poles, covered with tule and dirt, in which he lived five years; which shows that the weather was bearable, though no mention is made of his having a thermometer.

In June, 1850, the county offices were moved here, and for a number of years it was the county seat. It once enjoyed a fair amount of trade, and but for the ruinous mining debris would be an important shipping point. Two large warehouses are situated here, having capacities of three thousand and three thousand five hundred tons of wheat. In seasons of fair crops these are filled, and as much more is shipped from the banks of the river.

Wheat and barley is the most important of the resources of Sutter County, though almost anything that grows out of doors will flourish in her territory. To prove it, the following partial list will bear testimony. Heading the list are wheat, barley, oats, rye, corn; then follow buckwheat, broomcorn, hops, castor beans, potatoes, sweet potatoes, vegetables of all kinds, hay, honey, wool, fruit trees, among which may be mentioned apple, peach, pear, cherry, apricot, fig, quince, almond, prune, orange, lemon, plum, nectarine, olive, walnut, mulberry, and an infinite variety of small fruit.

In Sutter County is the finest peach orchard in the State, belonging to A. Abbott.

In 1875 the County Assessor reported four hundred thousand gallons of wine made in Sutter County, and the value of the fruit crop \$250,000. This latter has largely increased since then.

Sutter in 1888 ranks the twenty-eighth in wealth, and her State tax returns to the treasury were \$43,177 47. Last year (1887) not one dollar of her tax was delinquent.

Her greatest drawbacks are the amount she has to pay to support the levees, and the lack of a railroad through her center. With these overcome (and they soon will be) Sutter County will be crowded with an influx of people, who will find here everything worth living for, and the most delightful climate in the world.

Below will be found a summary of the weather for each month of the year 1887, at Nicolaus, Sutter County, California. Also a table of rainfall by seasons, for ten years past:

January, 1887.—Mean temperature, .22° above normal. Rainfall, 1.12°,

being a falling off of 2.40° from normal of ten years. There were 9 frosts. Violets bloomed on the first, almond trees on the twenty-second. Highest temperature, 71° ; lowest, 30° , on the seventeenth, being the lowest point reached by the mercury for three years.

February, 1887.—Mean temperature, 5.11° below average. Rainfall, 6.75 inches, being 3.92 inches in excess of average for ten years, and only exceeded in 1878, when 6.81 inches fell during the month. Hail fell on the sixth and twelfth. Frost was deposited on 8 days. Highest temperature, 71° ; lowest, 32° .

March, 1887.—The mean temperature for this month was 3.56° above normal. .96 inch of rain fell, which is 1.63 inches less than the average for the past ten years. There was 1 light frost. A thunder storm on the third, and a fall of hail. A lunar halo was observed on the fifth. Apple, apricot, and peach trees in bloom on the tenth. Twenty-eighth, lilacs in blossom. A meteor, of considerable brilliance, on the twenty-sixth. Highest temperature, 83° ; lowest, 42° .

April, 1887.—Mean temperature, 2.07° above normal. Rainfall, 2.22 inches, which is .80 of an inch less than normal. No frosts were noticed this month. There were 4,660 miles of wind. Several heavy gales from the north. Lunar halo on the fourth. From the twenty-first to the twenty-eighth were the hottest days of the month, maximum being on the twenty-fourth. A sudden fall of 18° characterized the twenty-eighth and twenty-ninth, with a windy, cloudy day, and a trace of rain; month ending clear, with the oft recurring north wind blowing. Highest temperature, 86° ; lowest, 42° .

May, 1887.—The mean temperature for May was $.72^{\circ}$ above normal. An appreciable sprinkle of rain gave .01 of an inch, while the average for this month for ten years is .54 of an inch. A killing frost on the tenth done much damage in the State. There was a hot, desiccating wind on the twenty-seventh; slight hail on the sixth; solar halo on the fourteenth; thunder and lightning on the thirty-first. Maximum velocity of wind, 30 miles. Highest temperature, 102° ; lowest, 42° .

June, 1887.—Mean temperature, 1.47° below average. Rainfall, 3.04 inches; this amount being precipitated in $3\frac{1}{2}$ hours, during a phenomenal storm of hail, which did immense damage to crops. Earthquake shock on the third; paraselene observed on the twenty-fourth. Maximum velocity of wind, 60 miles. Highest temperature, 102° ; lowest, 50° .

July, 1887.—Mean temperature, 2.37° below normal. No rain fell during this month, it being a month of almost cloudless skies. Highest temperature, 99° ; lowest, 52° .

August, 1887.—Mean temperature, 2.81° below normal. Rainfall, a sprinkle. Prevailing wind, south, with light breezes; total movement, 3,968 miles. Highest temperature, 99° ; lowest, 52° .

September, 1887.—Mean temperature nearly normal, being $.65^{\circ}$ below. Rainfall, .01 of an inch; mean for ten years being .22 of an inch. Geese flying south on the ninth. Highest temperature, 100° ; lowest, 54° .

October, 1887.—Mean temperature 4.30° above normal, being a month of sustained high temperatures. Rainfall, none; normal, being .90 of an inch, this being the only October, except one, which was devoid of rain, for ten years, the season of 1881-82 showing no rain for October. Remarkable for a long continued north wind, of about 1,500 miles movement. Highest temperature, 96° ; lowest, 50° .

November, 1887.—Mean temperature was 54.3° , being 1.13° above the normal. Rainfall was 1 inch, which was .97 of an inch short of the normal for eleven years. There were 3 light frosts, and 2 killing frosts. Wind

movement was below the average, but 2,398 miles being recorded. Highest temperature, 79°; lowest, 26°.

December, 1887.—The mean temperature for this month was nearly normal, being slightly colder than the average. Rainfall was 3.02 inches, or nearly normal, the average for eleven years being 3.25 inches. The month was remarkable for its frosts, it being deposited 13 days. Parhelia observed on the twentieth, lunar halos on the twenty-fifth and twenty-sixth. High winds prevailed, with maximum velocity of 60 miles, and a total movement of 5,084 miles. Immense flocks of ducks feeding in grain fields. Swans flying east on the twenty-fifth. Lilac trees bud on the fourteenth.

By the annual review summarized above, it will be seen that the mean temperature of each month shows one half to have been warmer and one half colder than the average. The mean temperature for the year 1887 was 61.78°, and for the year 1886 it was 62.02°.

The rainfall from January to June was 14.10 inches, and from June to and including December, it was 4.03 inches, which was not up to the average of this part of the season, normal being 6.16 inches. The total rainfall for the year was 18.13 inches. Highest temperature for the year was 102°, in May and June; lowest, 26°, in November.

SEASONAL RAINFALL AT NICOLAUS, SUTTER COUNTY, FROM AUGUST, 1886, TO DATE.

MONTHS.	1877-78	1878-79	1879-80	1880-81	1881-82	1882-83	1883-84	1884-85	1885-86	1886-87	1887-88
July											
August										trace.	spr.
September	.19	.19			.56	.37	.75	.19	spr.	.89	.01
October	.50	.38	1.50		.81	2.56	.75	1.62	spr.	.04	1.00
November	1.50	.31	2.00		2.06	3.68	.86		9.34	.04	1.00
December	1.38	.50	4.37	10.62	2.37	.31	.44	5.75	5.03	1.99	3.02
January	8.62	2.94	1.69	7.37	1.94	1.81	3.06	1.37	5.32	1.12	4.97
February	6.81	2.87	1.63	3.87	2.06	1.00	2.81		.49	6.75	
March	3.56	6.12	1.25	1.06	2.31	3.25	5.94		1.50	.96	
April	1.68	2.94	11.13	1.38	1.56	.62	3.81		4.93	2.22	
May	.06	.81	1.50	.06		2.81			.15	.01	
June				.50			.68			3.04	
Totals	24.30	17.06	25.07	24.86	13.67	16.41	19.10	8.93	26.76	17.02	

Average for ten years, 19.318 inches.

WEST BUTTE, SUTTER COUNTY.

The report of rainfall at West Butte, Sutter County, was furnished by A. S. Noyes, and covers a period from November, 1879, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1879											2.38	2.25		1879-80	13.25
1780	.62	.75	.75	5.88	.62	none	none	none	none	none	none	5.38	14.90	1880-81	12.20
1881	3.69	1.38	.75	1.06	none	none	none	none	.31	1.12	.38	2.00	10.63	1881-82	12.26
1882	1.88	2.31	2.57	1.19	.50	none	none	none	.25	.88	2.62	.25	12.45	1882-83	12.44
1883	.75	.19	3.06	.88	3.56	none	none	none	.62	.81	none	.19	10.06	1883-84	19.80
1884	3.81	2.12	6.50	3.75	.25	1.75	none	none	.57	1.00	none	4.94	24.69	1884-85	12.13
1885	2.00	.50	.37	2.12	.18	.45	none	none	.18	.56	7.45	3.65	17.46	1885-86	23.10
1886	4.75	.70	1.50	4.19	.12	none	none	none	none	.50	.44	.67	12.87	1886-87	11.19
1887	.50	6.06	.82	2.20	none	none	none	none	none	none	.75	1.50	11.83	1887-88	*7.12
1888	3.75	1.12													
Totals	21.75	15.13	16.30	21.21	5.23	2.20	none	none	1.93	4.87	14.02	20.83	113.99		116.37
Average	2.417	1.681	2.040	2.651	.654	.274	none	none	.241	.609	1.558	2.314	14.249		14.546

* Up to March 1, 1888.

ANNUAL SUMMARY FOR 1886, OF METEOROLOGICAL OBSERVATIONS MADE AT MICOLAUS.

By ALVAH PENDLETON, Voluntary Observer Signal Service.

North latitude, 38° 54' 51"; longitude west from Greenwich 121° 34' 1"
Elevation above sea level, 39.6 feet.

MONTH.	TEMPERATURE.			PRECIPITATION.				
	Max.	Min.	Mean.	Rainfall.	Frost.	Rainy Days.	Clear Days.	Prevailing Wind.
January	69	31	47.82	5.32	10	10	15	N.W.
February	74	38	55.00	.49	1	6	20	N.W.
March	76	38	52.45	1.50	1	12	17	S.E.
April	74	42	56.58	4.93	1	12	17	S.
May	88	53	64.07	.15	0	1	25	S.W.
June	100	60	75.39	.00	0	0	30	N.W.
July	111	62	79.79	.00	0	0	31	S.W.
August	101	58	78.02	trace.	0	0	29	S.
September	99	54	72.21	.00	0	0	27	S.E.
October	92	41	60.00	.89	2	4	20	N.W.
November	76	31	52.95	.04	1	2	20	N.
December	74	31	50.00	1.99	3	6	13	N.W.
Sums	10.34	539	744.28	15.31	29	53	264	
Averages	86.1	45.00	62.02	1.27	2.4	4.4	22	

ANNUAL SUMMARY OF METEOROLOGICAL OBSERVATIONS AT NICOLAUS, FOR
THE YEAR ENDING DECEMBER 31, 1887.

BY ALVAH PENDLETON.

MONTH.	TEMPERATURE.			Total Precipitation (Rain and Melted Snow)	Frost	Rainy Days	Clear Days	Cloudy Days	Fair Days	Prevailing Wind	Total Movement Wind
	Mean.	Max.	Min.								
January	48.27	71	31	1.12	13	6	17	11	1	S. & S.E.	3,563
February	44.77	71	32	6.75	9	12	9	16	3	S. & S.E.	3,937
March	59.56	83	42	.96	1	4	21	8	2	S. & S.E.	3,470
April	60.71	86	42	2.22	0	8	16	10	4	S. & N.	4,660
May	65.50	102	46	.01	1	4	17	10	4	S.	4,509
June	72.45	102	50	3.04	1	3	25	2	3	S. & S.W.	4,375
July	75.04	99	52	.00	0	0	27	1	3	S.	4,738
August	72.40	99	52	.00	0	0	23	3	2	S.	3,968
September	70.91	100	54	.01	0	3	21	7	2	S.	3,031
October	68.60	96	50	.00	0	0	27	2	2	N.	3,488
November	54.30	79	26	1.00	6	4	18	10	2	N. & N.W.	2,398
December	48.91	72	29	3.02	12	10	10	17	4	N.	5,084
Sums	741.42	1,060	506	18.13	43	54	233	97	32	-----	47,221
Averages	61.78	88.33	42.16	-----	-----	-----	-----	-----	-----	-----	3,935

YUBA COUNTY.

VALLEY AND FOOTHILL CLIMATE COMPARED.

To the general rule that temperature decreases as altitude is gained, the foothills of California present an interesting and important exception. It is found, in a general way, that the climate of the foothills of the Sierra Nevada, up to an elevation varying with the latitude, is equally as mild as that of the great valley below, whose altitude will average only about fifty feet above the level of the sea. While there is little difference in temperature as elevation is gained in what may be termed the thermal belt of the foothills, there is a steady increase in rainfall as one ascends from the valley. This increase in rainfall, in the foothills along the line of the Central Pacific Railroad, is about one inch to each one hundred feet of elevation. Thus Auburn, with an elevation of about 1,200 feet, has an average rainfall about twelve inches greater than that of Sacramento in the valley below.

It has been observed that the general elevation to which the mild climate of the valley extends in the foothills corresponds to the elevation of the Coast Range opposite. This is about 2,500 feet. The effect of the Coast Range is to shut off from the lower or thermal belt of the foothills, as well as from the great valley, the cool westerly winds from the Pacific. This protection gradually diminishes as elevation is gained, and there is no abrupt change in climate, in passing from point to point.

The late B. B. Redding remarked that the character of the climate in the foothills at any given point could be readily determined by the native trees. The presence of the digger or nut pine he considered an unfailing

proof of conditions of temperature similar to those of the valley. Wherever, he declared, the oaks, digger pine, buckeye, and chemisal, or any of them, constitute the preponderant arboreal vegetation, plants that can be successfully grown in the valley, can be successfully grown upon the hills. The experience of practical horticulturists has amply corroborated these conclusions by Mr. Redding, whose keenness of observation and powers of generalization were alike remarkable. To this general rule, however, some exceptions may be found, as in the case of the orange, with which the difference of a dozen or half dozen degrees of minimum temperature may be a matter of life and death. There are places in the foothills, of an elevation of 2,000 feet or more, whose average temperature corresponds closely with that of the Sacramento Valley, but which are, however, liable to be occasionally visited by more severe cold than is ever experienced in the valley.

For the purpose of illustrating the similarity of the climate of the foothills and the valley in respect to temperature, the "Appeal" has made a comparison of the records of Auburn and Marysville for the month of January just passed. The data for the comparison are found in the local weather table published by the "Republican," at Auburn, and that of the "Appeal" for this place. Both records show the readings of self-registering instruments, and the results are as follows:

	Auburn.	Marysville.
Highest temperature	65.0	67.0
Lowest temperature	13.0	18.0
Average of thirty-one maximum readings	50.5	49.7
Average of thirty-one minimum readings	33.5	35.3
Average temperature for month	42.0	42.5

The altitude of Auburn, according to the Smithsonian tables, is 1,176 feet, and of Marysville 80 feet. Yet, despite this difference of about 1,100 feet in elevation, the comparison above made indicates that the conditions of temperature are substantially uniform at the two places, Marysville having but little advantage over the foothill town.

It might be supposed, from the dense growth of native trees and bushes found in most portions of the foothills, compared with the relatively treeless condition of the valleys, that there is a radical difference in the climate of the two regions. But the difference of vegetation is probably due mainly to the dissimilarity of soil and drainage. The red soil of the foothills is always more or less gravelly, and, from both its chemical and mechanical composition, is warmer and more friable than the comparatively heavy soils of the valley. So far as the abundant tree growth in the foothills may be due to difference of climate, as compared with the valley, the chief factor must be greater rainfall. The dense native growth of trees and bushes in the foothills is nature's testimony to the adaptability of the region to the culture of fruit trees and vines. And who can doubt that where trees and bushes spring up and thrive from seed sown by the winds upon the untilled earth, with no other aid than the rain and sunshine, the same soil, under deep tillage and thorough cultivation, will give vigorous growth and rapid maturity to fruit trees and the vine, without irrigation? There is probably no tree or bush, native to the hills, needing less moisture than the olive tree and grapevine, and it is entirely safe to undertake the culture of these two upon any land in the hills that has sustained the digger pine, any description of oak, or the familiar "chaparral." Even the luscious peach and

apricot can be successfully grown in the foothills without irrigation, but to attain the largest measure of profit the use of water seems to be demanded. The need of irrigation upon any given spot in the foothills is usually dependent, as in other situations, upon the depth and composition of the soil and subsoil.

HEALTH OF YUBA AND SUTTER COUNTIES.

The stranger in search of a place to locate and establish a home for himself and his family, will endeavor to reach a locality where he will find the most favorable sanitary and climatic conditions. That country presents the greatest attractions to him which promises the best returns from his investments, profitable recompense for labor and enterprise, superior educational and social advantages for his family; which has productiveness of soil, large resources, material wealth, and prosperous industrial and commercial interests; but, above all, which possesses a climate conducive to the highest development of physical strength, and the enjoyment of robust health.

Where, then, shall the home-seeker be directed? Crowded out of the over populous countries of Europe, tired of the rigorous winters and the sultry summers of the east, he seeks, and not in vain, for his ideal home upon the Pacific Coast. For here he will surely find a happy combination of all the amenities of life.

California has long been justly celebrated for the salubrity and beauty of her climate. Among all her sister States she has been conceded the first rank in this regard. In fact, few, if any, of the popular health resorts of the world can boast of climatic influences so favorable to the restoration of health in the invalid, or to the full enjoyment and maintenance of health in the vigorous and well. And from a sanitary point of view, there is not a more inviting region in the whole State of California than the counties of Yuba and Sutter. There are many conditions in their location and topography which contribute to render these counties among the most attractive and healthy on the Pacific Slope.

Extending from the Bear River on the south, and the Feather River on the west, almost to the summit of the Sierra Nevada Range of mountains, well watered by numerous streams flowing from the mountain sides, its valleys bounded and traversed by rivers of no inconsiderable size, whose waters, together with that of their tributaries, in a large degree, modify the extreme heat of summer experienced in other and less favored parts of the State, its mountain climate always delightful and refreshing, with its pure water and invigorating atmosphere, Yuba County combines within itself all that can be desired in variety and healthfulness of climate.

Sutter County, too, stretching from the Feather River on the east, to the Sacramento River on the west, differs in its topography from most of the other interior counties of the State.

An attractive range of mountains of considerable elevation, rising abruptly from the surrounding level country, occupies the northwestern part of the county, and materially affects its climate, both in regard to temperature and annual fall of rain, with a gradual slope from north to south, draining all the superfluous surface water, with its impurities, into the rivers and tule basins below. With an abundance of pure water for domestic purposes easily accessible, it presents every feature calculated to promote and maintain the healthfulness of its citizens.

The fact that here, in common with all other parts of the State, we have but two seasons—wet and dry, or spring and summer—accounts for the

absence among us of many diseases prevalent in corresponding latitudes elsewhere on the continent.

The cold, inhospitable winters of the Eastern States, with their attendant discomforts and perils, are here replaced by green fields and genial sunshine; and never-failing ocean winds temper the heat of summer, rendering possible during the whole year almost a constant out-door life; a feature which constitutes so large a factor in the therapeutics of disease, and which adds so materially to the pleasure and enjoyment of all.

In Marysville the mean average temperature is 64° F. The highest summer temperature rarely exceeds 95°, and the mercury seldom falls below 30° above zero in the coldest weather. The hottest days of summer are invariably followed by a cool, refreshing sea breeze at night, which, together with the phenomenal dryness of the atmosphere during the summer months, gives complete immunity from many diseases which have their origin in climatic influences. Sunstroke and prostration from heat are almost unknown, and the ratio of deaths from pulmonary complaints, which number among their victims a larger percentage of deaths than from all other causes in more rigid and less equable climates, is here notably small, as shown by the statistics of the hygiene of the United States Army for a series of years.

In the early settlement of the State, intermittent and malarious fevers were common along the borders of the Feather and Yuba Rivers and their tributaries. At the present time they are seldom encountered, and when they do appear it is in a mild, non-malignant type, and easily controlled. The impression that these and kindred fevers yet prevail here to a considerable extent is still shared by many persons acquainted with our surroundings at that period, but who are ignorant of the changes that have since taken place in our environments. At that time the low, flat lands extending on either side of the river channels sustained a luxuriant growth of vegetable matter, the decay and decomposition of which, at some seasons of the year, produced serious illness among our early pioneers, unacclimated as they were, and, in many instances, poorly housed, ill fed, and destitute often not only of the comforts, but of the necessities of life. But these conditions no longer exist. For years past these bottom lands have been completely covered to a depth of from six to eighteen feet, by sand and gravel, deposited upon them during the annual inundations to which they are subjected in the time of spring freshets. Thus the principal insanitary condition of the whole valley has been effectually and permanently removed.

In support of these statements, the mortuary reports of the State Board of Health indicate that the death rate in Marysville, the most populous city in the district under consideration, and the only place furnishing a record of deaths, compares favorably with the lowest mortality reported from any other town or city in the State. The latest published statistics for 1885 and 1886, inclusive, show the annual death rate, collected from sixty-four towns and cities in the State, to be eighteen per thousand. Marysville furnishes her quota, with less than ten per thousand; and if our means of obtaining a record of all the deaths that occur in both counties were such that a correct list could be obtained, we would, in all probability, find this reduced to less than seven per thousand. These necrological tables, prepared as they are with as much care and accuracy as practicable, demonstrate beyond controversy the relative healthfulness of Yuba and Sutter Counties. But the mortality rate in every community depends largely upon the prevalence and virulency, or the absence of the so called diseases of childhood—diphtheria, scarlet fever, measles, and kindred affec-

tions. It is well known that Marysville and its vicinity enjoy a remarkable immunity from these diseases. When they do occur, the disease invariably appears in a sporadic form, imported by direct communication from some infected region in another part of the State: affecting perhaps several children in one family, rarely spreading to others even in the same neighborhood, and soon disappearing. This has been, without exception, the history of these diseases in this vicinity; and while occasional cases of scarlet fever and diphtheria have been reported, they have never become epidemic, and it is rare indeed that a death from these causes has been recorded.

The attendance at our public schools has been uniformly large, and it has never been reduced by any epidemic or contagious disease among the children. These are notable circumstances. For a city of over six thousand inhabitants could scarcely hope to escape, even under the most favorable sanitary conditions, an occasional visitation of an epidemic in some form.

This unusual freedom from infectious diseases among children—and the adult population as well—is largely attributable, no doubt, to general hygienic influences, but mainly to the exceptional properties, wholesomeness, purity, and abundance of our water supply.

It is impossible to overestimate the sanitary importance of water for the welfare and comfort of the community. "The supply of wholesome water," writes Dr. Parks, the English sanitarian, "in sufficient quantity, is a fundamental sanitary necessity. Without it, injury to health inevitably arises, either simply from deficiency of quantity, or more frequently from the presence of impurities."

In all sanitary investigations the question of the water supply is one of the first points of inquiry; and of late years quite unexpected evidence has been obtained of the frequency with which diseases are introduced by the agency of water.

Throughout the counties of Yuba and Sutter, the water used for domestic purposes is exceptionally pure and wholesome. The supply is chiefly from wells, bored through impervious strata of stiff clay, serpentine rock, or argillaceous slate, to depths varying from fifteen to forty feet. To guard against the infiltration of surface water and impurities from above, a block tin or galvanized iron pipe is placed from the well-curb at the top, down to the impermeable stratum below, practically giving them the essential character of artesian wells. Thus an abundant supply of water, absolutely free from pollution, is secured in every locality.

In the investigation of the water supply for cities, the questions to be considered are: quality, how collected, stored, and distributed; its purity, and the liability of its becoming contaminated, either at its source or at any point of its distribution.

The system of waterworks in vogue in the city of Marysville cannot, at least from a sanitary standpoint, be excelled. The supply is obtained from two artesian wells, eighty and one hundred and eighty feet deep, respectively, from which the water is lifted by steam pumps, having a combined capacity of over 70,000 gallons an hour, or 280 gallons of water a day per capita of population.

The daily quantity per head supplied in most of the large cities of the world is less than one fifth of this amount. The water is conveyed into and stored in a set of iron tanks, properly inclosed and ventilated, and from these tanks distributed through iron pipes to all parts of the city. The great depth of these wells insures freedom from infection from surface water and sewage, both potent factors in the development of zymotic diseases and the spread of epidemics.

This is beyond question the safest means of water supply that can be obtained for any city. River, spring, and rain water are all, more or less, exposed to pollution, and consequently are often suspicious, if not positively dangerous, and their use inimical to health; while here we have a system in operation which conforms with every sanitary regulation, and where its water is protected from any possible contamination from its source to the most distant point of distribution.

All deep well waters unavoidably contain, in a variable degree, mineral and organic matters; and it is a misapprehension to suppose that their presence in natural water necessarily renders the water impure or unwholesome. On the contrary, the medicinal and hygienic effects of the small quantity of iron, sulphur, magnesia, and other salts contained in the water supply of Marysville and the surrounding country, are unmistakable, and as has been stated above, to these qualities of the water, as much as the generally favorable sanitary conditions which prevail, are attributable the immunity which the people of our counties have long enjoyed from disease and pestilence.

TEMPERATURE AS AFFECTING CITRUS CULTURE IN YUBA AND SUTTER COUNTIES.

We give below a table of temperature of places known as having warm and equable climates. These tables are from the records of the United States Signal Service Office, and cover the years from 1877 to 1887, inclusive. "Spring," means March, April, and May; "Summer," June, July, and August; "Fall," September, October, and November; "Winter," December, January, and February.

The winter temperature at Los Angeles is 3.5° higher than at Marysville, and at San Diego, 4.4° higher. This difference is very slight, and the minimum at either place has never been low enough to kill citrus trees. Ice has formed in Marysville; so also has it been known in Los Angeles:

PLACE.	Spring.	Summer.	Autumn.	Winter.	Yearly Average.
Rome, Italy -----	57.6	72.2	64.0	48.9	60.7
San Francisco -----	54.6	58.1	58.2	51.4	55.7
Los Angeles -----	58.4	67.6	62.7	53.5	60.6
San Diego -----	58.1	66.7	62.7	54.4	60.5
Marysville -----	62.7	78.3	65.6	50.1	64.2
Nicolaus -----	57.7	77.7	61.7	50.9	62.0
Jacksonville, Florida -----	69.0	81.5	69.8	56.0	69.3
Riverside, California -----	62.7	78.3	65.3	51.7	65.2

One of the interesting facts exhibited by the table is that the winter temperature at Rome and at Marysville is nearly the same, the difference being one and one tenth degrees in favor of our city. But the average for the year at Rome is less than at Marysville, while a trifle higher than at either Los Angeles or San Diego.

It is especially noticeable that Marysville has a warmer and earlier spring, and cooler summer and fall, than the Eternal City.

It is well known that fruits ripen and vegetables mature much earlier in the neighborhood of Marysville than of Los Angeles. The above table supplies the explanation of this, in the fact that the seasons of spring and summer are warmer here. The mercury does not rise to a higher figure here, but the minimum readings are higher than at Los Angeles. The maximum temperature recorded at Los Angeles, is 108°, and at Marysville, 110°. Our spring and summer nights, while pleasant, are not so cool as

the nights of the same season at Los Angeles, where, in consequence of ocean winds and fogs, the growth of vegetation is less rapid than it is here. Thus it is that in this section the orange, for example, ripens a month or six weeks earlier, and reaches a much greater degree of excellence than near the southern cities of Los Angeles and San Diego.

A theory has been advanced that Northern California cannot compete in orange growing with Southern California, because of the alleged higher winter temperature claimed; but not so with the interior towns of Southern California, such as Riverside, famous for its oranges, where the average winter temperature is considerably below that of Los Angeles, and the temperature frequently falls below freezing point. The reason why Riverside raises so much better oranges than those of Los Angeles is because of the former's freedom from ocean winds and fogs. The unsoundness of the idea that the localities having the higher winter temperature should excel in the production of oranges, is shown in the fact that San Francisco has an average winter temperature of 51.4°, which is higher than that of Rome or Marysville. But no one will pretend to say that the orange thrives at San Francisco, while it does at Rome and Marysville. The essential feature of a winter climate suited to orange culture is, that the minimum temperature should not fall below what the trees can bear. That this limit has never been passed in the valley and its foothills, is best proved by the thousands of bearing orange trees scattered throughout their whole extent, from Shasta to Sacramento, some of them twenty or thirty years old. Mature orange trees, annually ripening a heavy load of luscious fruit, are unimpeachable evidence of the mildness of the climate of this region. They are eloquent living witnesses of the truth set forth by the facts and figures we present above.

RAISIN MAKING.

The process of raisin making has been well described, as follows, by a prominent raisin grower:

The sun-laved shores of the Mediterranean offer to the vine no finer soil and climate than the warm plains of California. The abundant water supply from the snow-filled cañons of the mighty Sierra gives health to the vine, and size to the berries, while the long summer heat fills the grape with all lusciousness. When the early September days pour a torrid heat upon the plains, the rich clusters put on a golden tint, the royal amber of full ripeness. Sun and water and warmth can do no more; the vintage time has come. To make sweet raisins, filled with jelly, and of a fine brown color, it is important that grapes shall show this yellow color. Picking early so as to be first in the market, does not mean good raisins. The grapes, when thus ripened, are carefully cut from the vine, and laid upon small platforms made of smooth sugar pine, and raised from the ground by inch cleats. These platforms are three feet long and two feet wide, and are capable of holding from twenty to twenty-five pounds of green grapes. They are then placed on the open spaces between the rows of vines, and left for the action of the sun and air. In picking the grapes, care should be taken not to handle the bunches so as to rub off the delicate bloom. In nine days after picking, the raisins are sufficiently dry on the upper side to admit of turning over. This is done by placing an empty platform upon a filled one, and reversing quickly. If skillfully done, no fruit will be thrown off. In five or six days after turning, the raisins are sufficiently cured to be removed from the platforms. This is the only really delicate part of the whole business, requiring much judgment; the more care, the better raisins. If the raisins have part of their juices still liquid, unconverted into jelly, so that a drop can be squeezed out by pressing the raisin between the thumb and finger, they are unfit to be put in the "sweat-box," as they will eventually mould or sour after packing; and if too much dried, the consumer will never know the deliciousness of properly cured raisins; therefore, a careful inspection of each tray must be made, and imperfectly dried raisins removed; after which, all dust and dirt must be vigorously fanned from the tray. They are now carefully slipped from the tray into large boxes called "sweat-boxes," which are three feet long, two feet wide, and one foot deep. After a layer (consisting of the contents of three or four platforms) has been placed in the box, a large sheet of manilla paper is laid upon them; then another layer of raisins and paper alternately, until the box is filled. The boxes are now taken from the vineyard to some cool building, and allowed to stand from two weeks to a month. The moisture passes into the stems, mak-

ing them pliable, and an equilibrium is established through all the raisins in the box. At the end of the proper curing time, the raisins pass into the hands of the packers. These pack from the layers on the manilla paper into galvanized iron trays, fitting comfortably into the boxes, which go to market.

BAD NORTH WINDS—MUCH WORSE IN SOUTHERN EUROPE THAN IN CALIFORNIA.

Written for the "Appeal," by Sergeant JAMES A. BARWICK, United States Signal Service Observer at Sacramento.

The northerly winds of California, being due to the position that the cyclones and anti-cyclones bear to each other (of which the explanation following will more fully show), a low barometer in Southern California and Arizona (which is termed a cyclonic area), with a light barometer in Washington Territory, Oregon, and Northern California (termed an anti-cyclonic area), causes the wind to blow from the north. The greater the difference between the high and low barometer, the more violent the wind's velocity will be. We know that our north winds are cold and dry in winter, but not such northers as blow over southern Texas. Those northers, we know, are simply terrible. To show the people of the Sacramento Valley that the much talked of and widely advertised climate of southern Spain, France, and northern Italy, are frequently subjected to winds called the "mistral" that are equally as severe as the well known northers of Texas, I extract from the Encyclopedia Britannica, vol. 7, ninth edition, pages 6 and 7, the following notes, which will show your readers that those excessively praised winter resorts suffer from more severe northern and colder weather than does our own favored valley. The following are the extracts spoken of:

Robert Russell, in his Climate of America, gives an instance of the temperature falling in southern Texas with a norther from 81° to 18° in forty-one hours, blowing at the same time with great violence. * * * It is to the cyclone (low barometer) and anti-cyclone (high barometer) we must look for an explanation of these violent changes. * * * Low pressures in the Mediterranean, along with high pressures to the northward, are the conditions of the worst winter weather in the south of Europe. A cyclone in the Gulf of Lyons or of Genoa, and an anti-cyclone over Germany and Russia, leave the "mistral" (cold and dry northerly winds) as their unfailing attendant, blowing with terrible force and dryness on the Mediterranean coasts of Spain, France, and North Italy, being alike in its origin and its climatic qualities the exact counterpart of the norther of the Gulf of Mexico. It follows that from the courses taken by the cyclones of the Mediterranean, and the anti-cyclones which attend on them, that also Algeria, Malta, and Greece are liable to violent alterations of temperature during the cold months.

["Marysville Appeal," March 20, 1888.]

ORANGE CULTURE.—PROFESSOR KLEE, STATE INSPECTOR OF FRUIT PESTS, DEFINES HIS VIEWS.—SOME VALUABLE OBSERVATIONS ON FROST AND THE EFFECT OF ELEVATION.

BERKELEY, March 15, 1888.

EDITOR "APPEAL:" Your issue, with an editorial criticising my letter to the "Pacific Fruit Grower," came during my absence. I am glad to learn that the damage done at Marysville is as slight as you say, and I hope before very long to be able to learn this with my own eyes.

Allow me to call your attention to the fact that I spoke of Marysville as having been but little affected as compared with counties farther on the plain. As regards the second freeze's affecting you as little in proportion, I have no personal knowledge, and at the time of writing the letter to the "Pacific Fruit Grower" I had had no opportunity to learn of the extent of

the damage done in your section, and consequently made no reference to Marysville or vicinity at all. If, as I hope it be proved, that Marysville is less affected than the central part of the valley, and generally more frost-free, as, indeed, your large orange trees seem to prove, then there must be other causes than elevation, such, perhaps, as your position near a large body of water, that have a modifying influence. Apart from this, it is a fact well known that the temperature of towns is generally a little higher than that of the open country adjoining. Sacramento City is favored in this respect, and as the towns of the valley grow and trees are planted, it will, no doubt, be found that the average temperature will be higher.

As regards my opinion that it would not be wise to undertake orange planting for profit all over the Sacramento Valley, being ill-advised, it may be so, but from my present knowledge I must adhere to it. It would be just as erroneous to claim this as to claim that all parts of the southern counties are adapted to profitable orange growing.

As a matter of fact, it is becoming understood better and better that gentle sloping mesa lands, or slightly rolling spurs in the valley, are the safest places generally. I said that the cold and its effects were by no means confined to the northern part of the State. Indeed, in the south considerable damage was done to fruit in certain sections. But even here, where I was told that oranges had been frozen solid on the trees, the damage to the trees was hardly perceptible, yet the crop was lost. It must be remembered that the tree can be hurt only by a much greater degree of cold than it takes to damage the fruit. Varieties of fruits, however, differ in this respect. Thus I learned that Malta Blood oranges thawed out and seemed but little hurt, while others, such as the Navel, were spoiled. An example as to how much difference a slight elevation makes: I was told by an orange grower at Colton that the temperature in town went down to 19° Fahrenheit, the effect of which could be plainly seen on various trees; yet on Colton Terrace, at a slight elevation, and perhaps only a quarter of a mile distant, I found the orange, tree and fruit, unhurt.

How low it went here I did not learn, but judging from effects, it probably reached but 25°.

As regards the difference of effect of cold weather on the slopes, and in what has been called thermal belts, compared with low lands and plains, all vine growing countries can testify. The thermal belts, also, may in certain years be badly affected, but in three times out of four, when the low lands suffer, the thermal belts do not; thus for the latter very much decreasing the danger.

I said that deciduous trees might be seen growing successfully within a short distance of evergreens, yet the two classes would be grown in different climates. People living in the mountain counties will understand what I mean. Probably my own place in the Santa Cruz Mountains affords for me the best illustration of this. For three years in succession I had a few orange and lemon trees cut down by the frost. These trees were standing at the base of a slope. They were moved about two hundred yards further up the slope, giving them an elevation of about fifty to sixty feet higher. Since then, for three years, until the present year, they were not affected by frost, and were bearing fruit when the cold wave of the present year struck them. There is frost noticeable at the lower elevation perhaps thirty or forty nights out of the season, when ordinarily three or four nights will be all that it shows at the upper elevation. Again, according to an old settler, in an adjoining valley growing corn there is liable to be killed at any time of its season, yet the rolling hills above the valley never suffer. So I might go on indefinitely with examples. In

Alameda County, on the steep hillsides and rolling hills from Warm Springs along to Niles, are grown early green vegetables on account of the remarkable freedom from hard frosts, yet the valley below often suffers severely.

However, to trust implicitly to elevation, without previous knowledge of the nature of the country, would be hazardous, because there are many exceptions.

In regard to my expression, that no climate can be equally adapted to the growth of evergreen and deciduous fruit, I think too much has not been said. True, as you said, the olive flourishes on the plain, beside the pear and plum, still I am certain it does better on the rolling hills (provided there be moisture enough) than on the plain. It would ripen earlier and have a better drained and warmer soil. What I mean to convey in my remark is that on warmer and more frost-free hills and swells, the favorite home of the olive, the deciduous trees are not so much at home as the evergreen. In fact they do not have their necessary rest in such places. As instance of this: Silva & Son told me they had to remove their nursery of hardier deciduous trees from the foothills of Newcastle, to the valley near Lincoln, because in the former place these trees continued growing all winter and did not receive the necessary rest. On the mesa lands in Southern California, experience has taught people that the winters are often too mild to keep the hardier deciduous trees in perfect health.

That the question of selecting proper locations for profitable orange growing in this portion of the State is one of greater difficulty than in the south, I feel certain no fair-minded person, at all familiar with the climatic conditions of both parts, will deny. As a general rule, we must select here for orange locations, places in the foothills or on rolling lands slightly above the general level, and in this case local experience regarding cold and warm currents will prove a valuable guide.

In the above I have recorded some facts tending to throw some light on a subject not generally known or indeed even understood, as it no doubt will be in years to come, when we shall be better able to point out the reasons of climatic variations. The general explanation that the cold air sinks down the slopes and spreads over the level land, explains a great deal, yet it is not sufficient. In this short and necessarily incomplete communication, I have but imperfectly covered the ground, but I trust it will serve to explain my reasons for taking the stand I have.

TEMPERATURE AND RAINFALL AT WHEATLAND.

The following monthly record of temperature and rainfall at Wheatland, Yuba County, was compiled and forwarded by Mr. William Lombard, and shows the highest, lowest, mean temperature, and total rainfall for each month, and for the year 1887:

MONTH.	Highest Temperature.	Lowest Temperature.	Mean Temperature.	Rainfall, in Inches.
January	74	30	47.3	0.94
February	68	31	44.1	5.37
March	79	40	54.2	1.33
April	84	41	58.8	2.15
May	106	41	66.8	0.10
June	110	52	73.2	0.57
July	106	55	77.2	.00
August	101	52	74.1	.00
September	103	51	72.8	0.06
October	95	42	67.0	.00
November	78	29	54.7	0.50
December	62	30	45.4	2.01
Sums	1,066	494	73.56	13.03
Means	8.88	41.1	61.3	-----

Average Precipitation in Yuba County.

	January	February	March	April	May	June	July	August	September	October	November	December
Marysville	3.41	2.52	2.05	1.53	0.67	0.29	0.01	0.01	0.24	0.98	1.52	3.34
Smartsville	7.11	5.70	4.48	3.16	0.88	0.44	0.05	none	0.11	1.52	3.90	6.68

COLUSA COUNTY.

By W. S. GREEN, of the "Colusa Sun."

Colusa County lies in the central part of the Sacramento Valley, with its southern boundary 80 miles due north from San Francisco, and 40 miles northwesterly from Sacramento City. The Sacramento River flows through the eastern portion of the county a distance of 25 miles and forms the eastern boundary, the remainder of its 60 miles of length from north to south. The county averages about 45 miles in width from east to west, and contains an area of 1,700,000 acres of land, of which about 800,000 acres are level valley lands; 350,000 acres are foothill lands; and 550,000 acres are mountainous lands of the Coast Range. The county is bounded on the north by Tehama County; on the east by Butte and Sutter Counties; on the south by Yolo County; and on the west by Lake and Mendocino Counties. The eastern half of the county is in the Sacramento Valley proper, and is mostly under cultivation. Running north and south through this great stretch of fertile lands is the Northern Railroad, one of the lines connecting the great Northwest with San Francisco and Sacramento; running east and west through the county is the Colusa and Lake Railroad,

connecting the rich valleys and foothills towards the west, with the county seat and with the line of steamers that ply the Sacramento River.

The population of the county is about 15,000. Colusa is the principal town, with a county seat, and has a population of 2,500; Willows is next in importance, with a population of about 1,200. The other towns of the county are, along the line of the railroad, Orland, Germantown, Norman, Maxwell, Williams, Arbuckle, and Sites; on the river, Butte City, Jacinto, Princeton, Sycamore, Grimes, and Grand Island; and in other sections of the county, College City, Newville, Elk Creek, Smithville, Leesville, Sulphur Creek, and St. Johns.

Colusa County lies in the same latitude as Southern Italy, France, and Spain. The county seat is further south than Rome, and 650 miles farther south than Paris.

The principal industry of the county is raising wheat and live stock. Colusa County ranks first in the State of California, and thirteenth in the United States, in the value of its agricultural products. It is the wealthiest county in the United States in proportion to population. The value of property, as shown by the assessment roll, is an average of over \$11,000 for each property owner, and over \$1,400 for each man, woman, and child in the county.

The first settlements in Colusa County were made along the river, and were for hotel purposes, entirely. As time passed on, stockmen brought in their herds and covered the whole country, each man claiming a large range, and these ranges were limited only by the facilities for water. Conflicting claims gradually forced the occupants of these ranges to purchase tracts of land that commanded water or held the key to the occupation of other lands. Nearly the whole county was thrown open by the Government to private entry, and the only limit to any man's acquisition of land was the number of dollars he could raise to pay the Government price of \$1 25 per acre. As time passed on, large areas were entered, and immense land holdings became the order of the day. The magnitude of this order of things in the past, is to-day evidenced by the fact that no less than half a million acres of land in the county is held by twenty-six men or firms, or an average of nearly 20,000 acres each. Along about 1870 some of these great tracts began to be sown to wheat, and as soon as the capabilities of the soil in this direction was practically demonstrated, the great herds of cattle and sheep rapidly gave way to grain, and Colusa County became in grain what she had been in stock—the richest county in the whole State. The income from grain on these large tracts has been very great, and easily earned. The large land holder has been satisfied with the results, and he has cared little whether new-comers shall be invited to seek homes in this section of the State.

But the new-comer is always progressive and pushing, and his continued crowding against the domain of these old land kings has made them, in a measure, restless, and it is apparent that a new era is dawning, and not many years will elapse until all these great ranches will be the myriad homes of the orchardist, the vineyardist, and the gardener. Many small orchards, vineyards, and alfalfa plats are now to be seen scattered about in all directions, and the day is surely not far distant when this whole area shall be given up to the grape, the olive, the prune, the pear, the peach, and the apricot. The growing of the raisin grape especially, is attracting much attention. The most successful raisin vineyards in California are to be found in the Sacramento Valley. The raisins here produced are, for quality and size, equal to those of Spain and Italy, which have been farmed for raisins for a thousand years. Yield, quality, market, and prices indicate

that this industry is one of the most profitable pursuits in which a man of small means may engage. The capital required is small, and the time from planting to production is short. The industry has, indeed, passed the experimental point. Merchants on this coast, as well as in the East, are evincing a desire to handle the California raisin product, instead of the foreign article. The Sacramento Valley, it must be remembered, lies in the same latitude as the famous raisin regions of Spain. The dry, warm climate here presents all the conditions necessary for the production of a choice raisin. But Colusa County is, in addition to this, most fully adapted to the growth and production of a fine quality of peaches, apricots, pears, cherries, figs, prunes, and kindred fruits. The foothills will also produce apples of an exceptionally fine quality.

The great irrigation canals now in contemplation by the several irrigation districts already organized, will, when built, greatly promote the settlement of the county, and the subdivisions of our large land holdings into small tracts. There are more than half a million acres in the county that are irrigable from the Sacramento River, and, although the county has reached its present exalted rank in wealth and prosperity, absolutely without irrigation, it is among the certainties that all the land in the county within reach of water will, at no distant day, be brought into the highest state of cultivation and production possible by the combination of the richest soil in the world with the purest and softest water that the heavens shed upon earth's most favored spot. All of California must, before many decades pass away, be the homes of millions of winter-burdened people across the mountains, who are year by year looking with a longing eye toward the western horizon that conceals from them this golden shore. And of all this landscape, shall not the fondest eye be cast upon that valley, over which the sun, daily about to be engulfed in the broad waves of the Pacific, looks back, selects the fairest appearing valley of the fast receding shore—our own Sacramento—and sheds upon it the bounty intended for a continent.

The writer of this has lived within the county for more than thirty-seven years. He pushed out into this, that was then a weird, unknown land in 1850, and he found clothed in the unsullied garments of nature, a scene so beautiful, a scene so enticing, that it took away from him all the enchantment of the mines of gold, and made him turn a deaf ear to the stories of bonanzas found and fortunes made, and planted his feet firmly on that land to which he has clung with a fondness and affection that ever increases as the years roll on.

How often in those days did the boy allow his imagination to run on adown the vista of time, when, perhaps, bent with age and frosted o'er with Time's artistic touch, when the trackless plain he walked would be covered over with garden, and orchard, and vineyard, and lowing herds, possessed by a happy and prosperous people, while upon the bosom of the river, so new, so beautiful, would float a commerce richer than that of the fabled Indias, with stories of which our grandmothers whiled away the winter nights. Aye, how often was it the dream of the boy, and how, year by year, has it been the life dream of the man, and how is it now the dream of the man who has passed the summit of the Alps of life, and is so far down the other side that he can see the very foot of the hill where winds the little stream around about the cemetery! But with the dreams, and hopes, and prophecies, and ambitions of the past, he feels that now is the fulfillment of them all near at hand.

RAINFALL AT COLUSA, COLUSA COUNTY.

The rainfall, etc., from Colusa was furnished by J. D. McNary, Special River Observer at that point. The table gives the rainfall by seasons from 1872-73 to date, and by months only from 1881 to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1872														1872-73	33.46
1873														1873-74	11.28
1874														1874-75	19.02
1875														1875-76	19.79
1876														1876-77	9.20
1877														1877-78	33.34
1878														1878-79	13.98
1879														1879-80	19.21
1880														1880-81	16.96
1881	3.70	2.27	.60	1.42	.34	none	none	none	1.19	none	.43	2.51	12.46	1881-82	22.62
1882	1.51	2.56	2.50	1.27	.04	.65	none	none	.23	1.19	1.73	.69	12.37	1882-83	11.66
1883	1.07	.37	2.36	.79	3.23	none	none	none	.68	.68	.11	.10	9.39	1883-84	29.75
1884	4.82	2.30	5.70	2.97	.12	2.88	none	none	.59	1.06	none	5.30	25.74	1884-85	11.69
1885	2.04	.58	.35	1.22	none	.55	none	none	.02	.79	7.69	3.98	17.22	1885-86	21.64
1886	4.57	.20	.64	3.65	.10	none	none	none	none	.65	none	1.25	11.06	1886-87	11.37
1887	.42	5.97	1.17	1.91	none	none	none	none	none	none	.60	1.90	11.97	1887-88	*6.90
1888	3.32	1.08													
Totals	21.45	15.33	13.32	13.23	3.83	4.08	none	none	2.71	4.37	10.56	15.73	100.21		262.53
Av'g's	2.681	1.916	1.903	1.890	.547	.383	none	none	.387	.624	1.509	2.247	14.316		17.502

* Up to March 1, 1888.

RAINFALL AT PRINCETON, COLUSA COUNTY.

The record of rainfall at Princeton, Colusa County, was furnished by David Bentley, Voluntary Observer of the Signal Service, United States Army, and covers a period from 1875 to May 1, 1887:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1875	4.30	.15	.30	none	.05	1.75	none	none	none	.75	1.95	1.85	11.10	1875-76	16.23
1876	2.53	4.40	3.50	1.05	.15	.05	.90	.05	.15	4.60	.40	none	17.78	1876-77	10.85
1877	1.65	1.75	.85	none	.20	.30	.30	none	none	.98	1.63	1.48	9.14	1877-78	26.40
1878	10.43	7.64	2.28	1.01	.65	none	none	1.02	.20	.50	.56	.13	24.82	1878-79	11.62
1879	1.83	1.71	2.44	1.61	1.10	.12	none	.13	none	.07	1.91	2.81	16.73	1879-80	13.40
1880	.95	.90	.95	4.93	.75	none	none	none	none	none	.10	6.85	15.43	1880-81	15.54
1881	4.50	1.78	.83	1.15	.10	.43	none	none	.60	.60	.22	2.51	12.52	1881-82	11.09
1882	1.21	2.54	1.53	1.08	.28	.52	none	none	.18	1.71	2.42	.62	12.09	1882-83	12.05
1883	.65	.23	2.35	1.07	2.82	none	none	none	.58	.64	.10	.14	8.58	1883-84	17.78
1884	4.03	2.35	5.06	2.71	.05	2.12	none	none	1.13	1.10	none	6.03	24.58	1884-85	12.19
1885	1.66	.57	.21	.98	.36	.15	none	none	.12	.69	7.21	4.78	16.64	1885-86	21.59
1886	3.91	.17	.92	3.53	.35	none	none	none	none	.53	.02	1.57	11.00	1886-87	10.44
1887	.47	5.67	.98	1.70											
Totals	37.92	29.86	22.20	20.82	6.96	5.44	1.20	1.20	2.96	12.08	16.92	28.77	177.41		168.74
Av'g's	2.912	2.297	1.708	1.601	.580	.453	.100	.100	.247	1.007	1.410	2.398	14.787		15.340

SEASONAL TEMPERATURES FOR PLACES IN COLUSA COUNTY.

	Princeton.	Williams.	Willows.	Orland.	College City.
Average winter temperature.....	48.2	47.5	45.7	52.6	48.4
Average spring temperature.....	61.4	61.7	63.0	65.1	63.3
Average summer temperature.....	78.7	79.6	81.5	81.7	76.6
Average fall temperature.....	63.3	63.6	64.5	67.6	60.9
Average yearly temperature.....	62.8	63.1	63.7	66.8	62.3
Highest temperature.....	114	114	112	113	114
Lowest temperature.....	19	19	19	22	19
Average rainfall— inches.....	15.25	12.09	12.03	16.36	16.35

Average Precipitation in Colusa County.

	January	February	March	April	May	June	July	August	September	October	November	December
Colusa.....	3.73	3.20	2.07	1.39	.51	.39	.04	.02	0.16	1.01	1.45	3.25
Orland.....	1.95	0.93	2.90	2.23	1.15	1.24	none	none	0.20	1.73	1.45	.47
Princeton.....	3.24	2.24	1.90	1.40	.63	.48	.11	.03	0.15	1.14	1.44	2.18
Williams.....	2.83	1.77	1.55	1.37	.53	.43	none	.01	0.16	1.01	.82	1.69
Willows.....	2.09	1.32	1.69	1.81	.55	.16	none	.01	0.16	.54	1.06	2.31

BUTTE COUNTY.

A general review of the different phases of the weather at Oroville, Butte County, will be found in the following tables. The report was compiled and furnished by Mr. Hiram Arents, Voluntary United States Signal Service Observer. There is a review of weather statistics for the years 1884, 1885, 1886, and 1887, and a daily report for each month of 1887, and January, 1888.

Table No. 1 contains mean, maximum, and minimum temperature; light, heavy, and killing frosts for the year; clear, cloudy, fair, and foggy days, four months; rainfall from July to December—six months:

Average Precipitation in Butte County.

	January	February	March	April	May	June	July	August	September	October	November	December
Cherokee	8.37	7.55	7.95	3.37	1.47	.55	.19	.06	.51	2.95	4.88	6.08
Cherokee Reservoir	13.35	9.95	11.69	3.78	2.06	.72	.30	.23	.51	4.08	7.80	5.77
Chico	4.23	3.74	2.49	1.58	.80	.30	.04	.03	.26	1.11	2.19	3.55
Oroville	4.58	2.78	1.17	1.29	none	none	none	none	.18	.63	.58	7.64

METEOROLOGICAL RECORD FOR THE YEARS 1884, 1885, 1886, AND 1887, AT
OROVILLE, BUTTE COUNTY.

Furnished by **HIRAM ARENTS**, Voluntary Signal Service Observer.

January, 1887.—The mean temperature was an average for the last four years. January, 1884, 50.45°; 1885, 53.23°; 1886, 48.18°; 1887, 50.78°; average, 50.63°. The maximum was an average one: 1884, 70°; 1885, 74°; 1886, 66°; 1887, 70°; average, 70°. Also the minimum was an average—1884, 36°; 1885, 34°; 1886, 29°; 1887, 32°; average, 32°. The mean barometer was 30–09.23; highest, 30–42; lowest, 29–60. The reading of this instrument on the twenty-eighth was the highest I have any record of: at 6 A. M. it was 30–40; at 10 A. M., 30–46; at 2 P. M., 30–39; at 9 P. M., 30–42. Prevailing winds westerly. There were 24 clear days, 5 cloudy, and 2 fair. Rain fell on the fifteenth, eighteenth, nineteenth, twentieth, and sprinkled on the thirteenth, fourteenth, seventeenth, twenty-fourth, and twenty-sixth imperceptible for measurement. Rain fell for the month 1.02 inches. For the season to date commencing with July, 1886, 4.69; light frost on the seventh, tenth, twenty-second, and thirty-first, and heavy on the sixteenth and twenty-fifth. On the second almond trees were in bloom; on the fifteenth the apricot; twenty-ninth, the peach and nectarines. At 8 P. M. on the second a brilliant meteor started westwardly. At first as seen above the line of a light, thin fog, it was of a beautiful green color, and as it proceeded it changed to red, and burst with a loud report, leaving a trail of scintillations behind it. Duration, 6 seconds.

February, 1887.—This month was the coldest I have any recollection of: the mean was nearly 4° below the average for the last four Februaries. In 1884 the mean was 49.46°; 1885, 59.16°; 1886, 59.01°; 1887, 47.03°; average, 51.16°. The maximum ruled low during the month, excepting two days, when it reached 70°; but comparing it with the last three Februaries, it was but 1° below the average—1884, 74°; 1885, 70°; 1886, 70°; 1887, 70°; average, 71°. The minimum was 3° below the average—1884, 25°; 1885, 38°; 1886, 44°; 1887, 32°; average, 34.3°. On the eleventh of February, 1884, at 6 A. M., the thermometer was 31°; at 12 noon, 38°, and raining; the wind changed from N.W., and a snowstorm set in, leaving three quarters of one inch on the ground. This was the first snowfall I had seen in Oroville. During the night the weather cleared up very cold, and at 6 A. M. on the twelfth my thermometer marked 25°. This was the coldest morning during my six years residence in Oroville, and was the first and only snowfall I have seen. The present month there was 15 clear days and 13 cloudy. Clear days for the year, to date, 39. Invariably February is a pleasant month, but this one deviated from all the others. It was a cold, stormy month. It rained on the third, fourth, fifth, sixth, seventh,

eighth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, twenty-first, and twenty-eighth—13 days; and sprinkled on the ninth, tenth, and sixteenth. Rainfall for the month, 8.93; for the year, to date, 9.95; season, to date, 13.66. Prevailing winds, southerly. There were six frosts during the month: killing frosts on the nineteenth, twentieth, and twenty-fifth; thermometer at 32° each morning. On the twenty-seventh heavy frost; thermometer at 34°. Light frost on the eighteenth and twenty-sixth; thermometer at 35° and 36°.

March, 1887.—The mean was about an average for March—61.13°. Although the months of March, 1885 and 1886, were extraordinary for extremes in mean temperature, yet the present month shows a fair average: March, 1884, the mean was 59.08°; 1885, 68.18°; 1886, 55.18°; 1887, 61.13°; average, 61°. The maximum was 84°—about 4° above the average; 1884 it was 80°; 1885, 86°; 1886, 70°; 1887, 84°; average, 80°. The minimum was nearly 4° below the average—1884, 40°; 1885, 46°; 1886, 40°; 1887, 37°; average, 40.3°. Clear days, 26; cloudy, 3; fair, 2; for the year, to date, 65. It rained on the second, third, fourth, and seventeenth. Rainfall for the month, 0.98 of an inch; for the year, 10.93; for the season, to date, 14.64. Prevailing wind, southerly. Two slight frosts this month—one on the eighteenth, thermometer 39°; and on the nineteenth, thermometer 37°.

April, 1887.—The mean compared with the previous Aprils was about an average—in 1884, 60.53°; 1885, 64.75°; 1886, 60.27°; 1887, 62.12°. The average would be 62°. The maximum was 2.5° above the average—1884 the highest was 80°; 1885, 84°; 1886, 84°; 1887, 86°; average, 83.2°. The minimum was nearly 4° below the average. April, 1884, the lowest was 46°; 1885, 42°; 1886, 44°; 1887, 38°; average, 42.5°. On the twenty-first a heavy northwest wind set in and continued till the twenty-sixth, increasing the temperature 6°. On the twenty-ninth, a light shower of rain passed over the town from the northwest, accompanied with thunder and lightning; duration about fifteen minutes. At the same hour a double rainbow with brilliant colors appeared in the east. .07 of an inch of rain fell during this shower. Clear days, 21; cloudy, 7; fair, 2; for the year to date, 86. Rain fell on the sixth, eighth, ninth, thirteenth, nineteenth, twentieth, twenty-ninth, and sprinkled on the tenth. Rainfall for the month, 2.81 inches; for the year, 13.74 inches. Prevailing winds, northerly. One light frost this month, on the eleventh, thermometer 38°.

May, 1887.—This month showed the greatest extremes between the maximum and minimum temperature I have any record of. The month opened with the usual mildness for May. Between the first and ninth the readings of the maximum temperature was from 82° to 66°, and the minimum, same dates, from 60° to 48°. On the tenth and eleventh a great change in the temperature was noticed, and the thermometer fell to 40° and 39° each morning. A light frost was noticed on these mornings; it was not generally distributed over this section of the country, but seemed to do considerable damage in some gardens and in the adjoining one none. Grapes, blackberries, raspberries, strawberries, melons, and cucumbers received considerable blight, while in other parts of the same garden no damage was done. Fruits of all varieties were too far advanced to be injured by these light frosts. Notwithstanding the extremes between the maximum and minimum, the mean for the month was a fair average compared with the last three Mays—1884, 68.82°; 1885, 72.13°; 1886, 68.45°; 1887, 70°; average, 69.85°. In regard to the maximum temperature, this month shows the highest of any of the four Mays, about 8° above the average—1884, 88°; 1885, 96°; 1886, 90°; 1887, 102°; average, 93.58°.

The minimum shows about 10° below the average. For May, 1884, 51° ; 1885, 52° ; 1886, 52° ; 1887, 39° ; average, 48.02° . Clear days, 24; cloudy, 2; fair, 5; clear days for the year to date, 110. It rained on the sixth and ninth; sprinkled on the sixteenth and nineteenth. Rainfall for the month, .08 of an inch; for the year, 13.82 inches; season to date, 17.53 inches. Two light frosts this month, one on the tenth, thermometer at 40° ; and on the eleventh, thermometer 39° .

June, 1887.—This month was another of extremes in the thermometer. From the first to the fifteenth it was below the average for June, and from the latter date to the close of the month it was above the average. On the nineteenth and twentieth a hot wave passed over this section of the State, running the mercury above 100° , and for fourteen days the maximum temperature I ever remember in the month of June. The mean for 1884 was 72.70° ; 1885, 73° ; 1886, 79.12° ; 1887, 76.09° ; average, 75.23° . In the maximum this month showed nearly 10° higher than the former Junes. In 1884 the highest was 94° ; 1885, 90° ; 1886, 95° ; 1887, 104° . The minimum was nearly 3° lower than former months of June—1884, 56° ; 1885, 57° ; 1886, 62° ; 1887, 54° ; average, 57.1° . Clear days, 24; cloudy, 2; fair, 4; clear days for the year to date, 134. Rain fell on the eleventh and twelfth; sprinkled the twenty-second. Rainfall for the month, 0.18 of an inch, and for the season, commencing with July, 1886, and closing with June, 1887, 17.71 inches; and from January first to date, 14 inches. Prevailing winds, southerly. No frost this month.

July, 1887.—The mean for this month was nearly 1° below the average for July—1884 it was 79.76° ; 1885, 78.79° ; 1886, 81.16° ; 1887, 78.75° ; average, 79.62° . The maximum was nearly 3° above the average—1884, 94° ; 1885, 96° ; 1886, 102° ; 1887, 101° ; average, 98.01° . The minimum was 1° below—1884, 57° ; 1885, 60° ; 1886, 61° ; 1887, 57° ; average, 58.02° . It will be seen the highest temperature was 101° this month at 2 P. M., and the lowest, 57° , at 6:30 A. M. For 14 days the thermometer ranged at 2 P. M. from 90° to 101° , yet the nights were pleasant, the thermometer ranging from 57° to 78° . Clear days, 30; fair, 1; clear days for the year to date, 164. No rain fell this month, the commencement of the season. There was a slight sprinkle on the eighth and ninth, imperceptible for measurement. Rain fell for the year to date, 14 inches. No frost this month.

August, 1887.—The mean was 3° below the average for August—1884 the mean was 88.17° ; 1885, 82.11° ; 1886, 80.24° ; 1887, 76.22° ; average, 80.18° . The maximum was about 3° below the average—1884, 102° ; 1885, 105° ; 1886, 98° ; 1877, 97° ; average, 100.2° . The minimum was nearly 5° below the average—1884, 59° ; 1885, 63° ; 1886, 62° ; 1887, 54° ; average, 59.2° . The above shows the present month the coldest of the last four months of August. Number of clear days this month, 30; fair, 1; clear days for the year to date, 194. On the twenty-ninth, first rainfall for the season, measuring but .01 of an inch, and for the year to date, 14.01 inches. Prevailing winds, southerly. No frost this month.

September, 1887.—Many persons here were under the impression this month was unusually hot for September. The records for the past four years show the mean of the present month was three quarters of one degree above the average—1884, 72.73° ; 1885, 76.12° ; 1886, 74.19° ; 1887, 75.25° ; average, 74.57° . The maximum was about an average—1884, 97° ; 1885, 97° ; 1886, 96° ; 1887, 96° ; average, 96.2° . The minimum was slightly above the average—1884, 54° ; 1885, 56° ; 1886, 54° ; 1887, 55° ; average, 54.3° . Clear days, 26; fair, 4; clear days for the year to date, 220. Light showers of rain fell on the fifth, sixth, and twenty-fourth, and

sprinkled on the twenty-third. Prevailing winds, westerly. Rainfall for the month, 0.15; season to date, 0.16; year to date, 14.18. No frosts this month.

October, 1887.—The mean was over 2° above the average. In 1884 it was 64.31° ; 1885, 69.25° ; 1886, 62.22° ; 1887, 68.40° ; average, 66.05° . A high temperature prevailed most of the month, owing to the long spell of west and northwest dry winds, lasting 23 days, classing the month as a disagreeable one for the season: the maximum nearly 2° below the average for October. In 1884, it was 87° ; 1885, 94° ; 1886, 87° ; 1887, 91° ; average, 89.3° . The minimum, about 1.30° below the average. In 1884, it was 46° ; 1885, 52° ; 1886, 43° ; 1887, 45° ; average, 46.02° . Clear days, 29; fair, 2; cloudy, none; clear days for the year, to date, 249. No precipitation this month sufficient for measurement. Rainfall for the season, 0.16; for the year to date, 14.16. Since the first of May to the thirty-first of October, both dates inclusive, 184 days, only 0.43 of an inch of rain had fallen at this station. During this long drought no complaints from our people have been heard, or suffering caused therefrom. In all other respects it has been the best drying season known for the curing of raisins, figs, and other fruits. Prevailing wind, westerly. No frost this month.

November, 1887.—The mean for this month was an average for the past four Novembers. It was mild and pleasant, and at no time between the first and twenty-second was the reading of the exposed thermometer below 43° . On the twenty-fifth, twenty-sixth, and twenty-seventh, a sudden change in the weather reduced the temperature to 32° , 32° , and 31° , respectively, for the three above dates, and these days were the coldest we have any record of for November. The mean for the four Novembers are as follows: 1884, 61.62° ; 1885, 57.10° ; 1886, 58.08° ; 1887, 58° ; average, 57.45° . The maximum shows 3° above the average—in 1884, 76° ; 1885, 74° ; 1886, 76° ; 1887, 80° ; average, 77.02° . The minimum for 1884 was 40° ; 1885, 42° ; 1886, 31° ; 1887, 31° ; average, 36° ; showing the minimum to be below the average for November. Clear days, 21; cloudy, 7; fair, 2; and for the year to date, 270; rainy days, 3. It rained on the twenty-eighth, twenty-ninth, and thirtieth, and sprinkled on the third: rainfall for the month, 1.21; season, to date, 1.37; year, to date, 15.37. Prevailing winds, southerly. Three killing frosts this month.

December, 1887.—This was the coldest of the last four Decembers, although no day in the month was the thermometer lower than 34° , yet the average daily reading shows the monthly mean 1.30° below the average. The mean for December, 1884, was 53.66° ; 1885, 53° ; 1886, 52.25° ; 1887, 51° ; average, 52.48° . Maximum temperature, 1884, 74° ; 1885, 75° ; 1886, 70° ; 1887, 67° ; average, 70.06° ; the month, 3.40° below the average. The minimum temperature, about 2° below the average—1884, 31° ; 1885, 37° ; 1886, 37° ; 1887, 34° ; average, 36.1° . The highest barometer was 30.29; lowest, 29.40; mean, 30.08. Clear days, 17; cloudy, 9; fair, 5; rainy days, 8. It rained on the first, third, fourth, seventh, ninth, twelfth, twenty-eighth, twenty-ninth, and sprinkled on the thirty-first. Rainfall for month, 2.62 inches; for the year 1887, 17.99; and for the season, to date, 3.99. Prevailing wind, southerly; number of days from S.E., 7; N.W., 8; S., 8; S.W., 3; W., 2; N.E., 3. Light frosts on the tenth, thirteenth, sixteenth, seventeenth, eighteenth, twenty-fourth, and thirtieth: thermometer ranging from 34° to 39° .

METEOROLOGICAL RECORD FOR JANUARY, 1888.

By H. ARENTS, of the U. S. V. Signal Service.

During the present month a cold wave passed over the State, commencing on the fourth. The reading of the thermometer on that morning was 30°. On the morning of the fifth the weather moderated: at 6:30 A. M. it was 38°, and at 7:30 A. M. a snowstorm set in, lasting three hours. At times the snow fell fast and in large flakes, melting as it reached the ground, not leaving a trace, except on sheds and wooden structures. This was the first flake of snow seen falling in Oroville since February 11, 1884, then half an inch remaining on the ground. January sixth the thermometer again fell to 30°, and from date until the eighteenth it was below the freezing point at the 6:30 A. M. reading taken from my self-registering minimum thermometer. Nine of these days the readings ranged from 20° to 29°: 2 days at 30°: 1 at 31°, and 1 at 32°. The day of the snowstorm was the only one out of the fourteen days that the thermometer was above the freezing point. In a conversation with Judge Lott, who has been a resident of the eastern part of Butte County since 1849, he says he remembers the cold wave of January, 1854, and agrees with me that in the cold wave of January, 1888, there were more continuous cold days and lower temperature than there was in January, 1854, and we consider the month just past the coldest experienced in this section of the State since gold was discovered in California.

The mean temperature for January, 1888, was 45.41°, the lowest I have any record of. The average for the previous three years was 50.42°, showing that January, 1888, was 5° below. The highest temperature was 65°, on the thirtieth, 5° below the average. Lowest was on the fourteenth, 20°: this is 13° below the average for January. Highest barometer was 30.52, on the seventeenth, the highest I have ever recorded: lowest, 29.44; mean, 30.05. Number of clear days, 11: cloudy, 17: fair, 3. It rained on the first, second, fifth, nineteenth, twentieth, twenty-first, twenty-second, twenty-third, twenty-fifth, twenty-seventh, twenty-eighth, twenty-ninth, thirty-first: sprinkled on the twenty-fourth: rainfall, 7.72: season to date, 11.71: last season, 4.68: excess, 7.63. Prevailing winds, southerly: number of days from the E., 1: S.E., 12: S.W., 3: N.W., 7: W., 2: N.E., 2: S., 1. Hard frosts, 13.

RECAPITULATION.

Mean temperature, 45.41°: maximum temperature, 65°: minimum temperature, 20°. Clear days, 11: cloudy days, 17: fair days, 3. Rainfall, 7.72 inches; season to date, 11.71 inches. Frosts, 13.

OROVILLE, BUTTE COUNTY.

The rainfall for Oroville was furnished by Mr. Hiram Arents, Signal Service Observer at that place, from September, 1884, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1884									2.27	2.08	.05	9.33	*13.73		
1885	2.10	.73	.25	1.64	.65	.39	spring	none	.20	spring	11.27	5.53	22.76	1884-85	19.49
1886	6.13	.36	2.70	5.48	.50	none	spring	spring	none	.63	.29	2.75	18.84	1885-86	32.17
1887	1.02	8.93	.98	2.81	.08	.18	spring	.01	.15	none	1.21	2.62	17.99	1886-87	17.67
1888	7.72													1887-88	†11.71
Totals.	16.97	10.02	3.93	9.93	1.23	.57	spring	.01	2.62	2.71	12.82	20.03	59.59		69.33
Average.	4.242	3.340	1.310	3.310	.410	.190	spring	.003	.655	.678	32.05	5.060	19.863		23.110

* Total for September, October, November, and December, 1884. † Up to February 1, 1888.

CHICO, BUTTE COUNTY, AND ITS ADVANTAGES.

By WATSON CHALMERS.

Chico is situated in 39° 43' north latitude, and 121° 50' west of Greenwich. Elevation above sea level, 193 feet. It is one of the largest towns in the Sacramento Valley, having a population of over 6,000 inhabitants. The portion of the valley immediately surrounding Chico runs from the Sacramento River east for a distance of ten miles, where it meets the lower Sierra Nevada, and gradually merges into its long, gentle sloping foothills and valleys. The same rich soils and great oak openings extend north and south for forty miles, giving an area of fertile soil, tributary to the town, of not less than 400 square miles, or 250,000 acres.

To the east, up the western slopes of the Sierra Nevadas, for a distance of fifteen miles from the eastern line of the valley land, is the warm "gold belt," free from frosts, where there are deep, rich valleys, sloping hill and mountain sides, with deep soils, nutritious grasses, swift, clear streams, and cold, bubbling springs. Still higher on the mountain sides are the forest belts that darken the land with their dense foliage. In this frostless foothill belt there are very many thousand acres where beautiful homes can be made amid abundant fruits and flowers. In all, it is safe to say that there are 400,000 acres of land tributary to Chico.

Chico, commonly known as the "City of Roses," is embowered with shade trees, and her residence lawns are beautifully laid out in carpets of green, while the climbing vine and rose cover the dwellings. From her streets to the south can be seen the clear blue outlines of Mt. Diablo; in the west the rounded domes of the Coast Range; in the north Shasta's peerless cone rising out of the great valley and standing clear and sharp against the deep blue of the sky, and in the east the great Sierra Nevada Range, uplifting itself to an elevation of eight thousand feet, a mighty barrier between the warm flower-laden valleys of the coast and the colder basins to the east.

In this vast amphitheater of surrounding hills and mountains is a land as rich as any in the valley of the Nile, the Po, or the Yangtze, and with

a climate so warm, balmy, and hospitable that all the verdure of the temperate and semi-tropic zones find a most congenial home. This region was naturally so rich and so beautiful that it extorted the most extravagant praises from the early Jesuit fathers, from the first American explorers, and from the argonauts in the first days of gold hunting.

THE CLIMATE.

To the tourist and the home-seeker the climate of this portion of the State, situated between the thirty-ninth and fortieth parallels of latitudes, is unaccountable. That it is winterless, without snow or ice, is to them almost impossible to believe, while the country east of the Sierra Nevadas, on the same latitude, has long winters, with snow, ice, and bleak winds. For the benefit of these new-comers the influences that make the climate so mild and favorable are here briefly but comprehensively given.

In all parts of the earth there are two great determining causes of climate—astronomical and geographical. The former of these act uniformly on the same lines of latitude everywhere, while the latter are the modifying influences. It is to these last that we must look for the marked differences between our Pacific climate and that of the same latitude beyond the Sierras. The first of the geographical influences is the remarkably low elevation of the Sacramento Valley, which is in marked contrast to most of the valleys of this continent. Chico is two hundred miles from the Bay of San Francisco, and is only one thousand one hundred and ninety-three feet above tide water.

The second cause is the ocean currents that rise in the tropical regions of the Indian Ocean, sweeping around the earth's great circle, wash the whole of this coast, and temper the climate in the same way that the Gulf Stream modifies the climate of England and France.

The third and greatest influence, and the one that is almost entirely overlooked, is the great continuous mountain wall that commences at the extreme western point of the peninsula of Alaska, and runs south and along the whole coast of the continent to and into Mexico. The extreme starting point of this great barrier is nearly two thousand miles west of San Francisco, and it diverts all the air currents which come from the Arctic snow and ice fields to the east of California. It is the entire absence of these Arctic winds and the presence of tempered winds from the heated ocean currents, that gives us a winterless climate along the fortieth parallel of latitude—that gives us the orange, the lemon, the citron, olive, and pomegranate, in place of the snow, ice, and freezing blasts of the same latitude east of this great mountain barrier.

A more indisputable evidence of the climate of this section is in the character of the products of so many years that this production has passed from the domain of experiment to that of established fact. Oranges, lemons, olives, persimmons, and pomegranates have been successfully grown in many places in and around Chico for the past ten years. All the tender wine, table, and raisin grapes of the south of France and Italy grow to perfection in Chico and the surrounding country, and in quality and quantity of yield are surpassed nowhere in the world.

The annual rainfall in the vicinity of Chico is about 24 inches, and the larger part of this comes in the autumn and winter months. What is usually called the "rainy season" generally commences in October, and enough rain falls so that plowing and seeding can be done. From that time to April, and sometimes till May, there is rainfall. Through all these months, when the ground of the winter climate countries is covered with

snow, and the streams are locked in ice, our fields are alive with busy workers. There is no such rainy season here as is known in some other countries. There are no months, or weeks even, that the rain falls so as to drive people indoors. A few hours of rain comes, and then is followed by two or three days of warm, balmy, spring-like weather. The weather statistics show that in the year there are more than 200 perfectly clear days, and nearly 300 in which the sun shines portions of the time.

Professor H. E. Van Deman, of the Pomological Bureau of the Agricultural Department at Washington, was one of the visiting horticulturists in Chico, on February first, and he used the following language in an interview:

I did not expect to find so mild a climate so far north; it has been quite a surprise to me. The Napa and Sacramento are the two greatest valleys we have yet seen. From a horticultural point of view, what we were shown at General Bidwell's at Chico was the very finest of its kind I have ever seen. The largest fig and cherry trees in the United States are growing there, and General Bidwell told me that one cherry tree alone yielded 1,750 pounds of fruit in a year. I also saw there a great many thousand peach trees in the nursery. If the horticulturists of California take care of things and go on as they are, there is no reason why they cannot raise one hundred times more fruit than they do now. Practically speaking, fruit growing in this State has only just begun. The facilities are almost limitless. The foothills of the Sierra Nevada Range are well adapted to grow olives, and olive culture could be made most profitable, because we are now importing a great quantity of olive oil. I had heard so much and read so much about California that I had great expectations before I left Washington—they have been more than fulfilled.

CHICO TEMPERATURE AND RAINFALL.

The following table shows the average temperature and rainfall by seasons, as deduced from fourteen years' observations, along with the highest and lowest temperatures:

	Seasonal Temperature— Degrees.	Seasonal Rain- fall—Inches and Tenths.
Average winter.....	47.3	11.52
Average spring.....	62.4	4.88
Average summer.....	81.3	.36
Average autumn.....	64.1	3.56
Average yearly.....	63.8	20.32
Highest temperature.....	108.0	.....
Lowest temperature.....	18.0	.....

Average monthly rainfall, as deduced from fourteen years of observation:

MONTHS.	Inches.	MONTHS.	Inches.
January.....	4.23	August.....	.03
February.....	3.74	September.....	.26
March.....	2.94	October.....	1.11
April.....	1.58	November.....	2.19
May.....	.80	December.....	3.55
June.....	.30		
July.....	.04	Seasonal.....	20.32

Average monthly temperature, as deduced from fourteen years of observation:

MONTHS.	Degrees.	MONTHS.	Degrees.
January.....	44.0	August.....	81.9
February.....	49.8	September.....	75.3
March.....	56.5	October.....	64.8
April.....	61.9	November.....	52.3
May.....	68.7	December.....	46.1
June.....	78.0	Year.....	63.5
July.....	83.2		

The following shows the mean temperature for each month during the year 1887, at Chico, along with the average for the year, and the highest and lowest temperatures:

MONTHS.	Degrees.	MONTHS.	Degrees.
January.....	50.5	September.....	77.7
February.....	45.0	October.....	70.5
March.....	60.0	November.....	55.2
April.....	65.0	December.....	48.5
May.....	72.7	Year.....	62.2
June.....	80.6	Highest.....	114.0
July.....	88.3	Lowest.....	28.0
August.....	80.0		

Lowest temperature in January, 1888, during the passage of the cold wave, was 18°.

TEHAMA COUNTY.

By ALBERT S. FOSTER.

In the first settlement of this county the soil was thought to be adapted only to purposes of grazing, to which it was put; but, in a few years, as the herds began to multiply and the ranges became overstocked, some attention was given to grain, but mostly for feed. It was soon found that wheat and barley were more profitable than cattle and sheep—that is on lands susceptible of cultivation. Then everything run to wheat as it had previously to stock, and the most practical farmers began to turn their attention to both. By and by, the raising of the more hardy fruits claimed the attention of the more progressive men, who were amply rewarded for perseverance and foresight.

And now, since the thermal and chemical conditions of our soils are more thoroughly understood, many farmers are turning their attention to the cultivation of the more tender and valuable fruits, as the orange, lemon, olive, etc. Every year the operations of the farmer are becoming more and more diversified.

The natural result of all this is that farming is passing from the extensive to the intensive. Men from the various vocations are buying small tracts of ordinary land and putting more than the ordinary amount of skill and earnest labor upon them, the result of which is to make the land equal if not superior in productiveness to the very best lands under the ordinary mode of cultivation.

All these things could not be foreseen, but when once comprehended it is no trouble to deduce general propositions. Our large farmers are becoming shrewd political economists, in spite of themselves; they are learning that the relative values of raw and cultivated lands are slight: primarily, that it is the skill and labor, intelligently applied to a piece of land, that enhances its value; that, although wheat may be king, it cannot be queen, nor prince, nor princess at the same time. The thrifty Yankee maxim, "The shadow of the owner enriches his soil," probably accounts for the poor returns from some of the extensive ranches, where it is often impossible for the owner to give the personal supervision it properly deserves.

Now, the kind of people we wish to come and settle among us, are principally capitalists and laborers. The capitalists need not be millionaires, nor, indeed, men whom the world usually terms rich, nor need that capital be altogether of the kind that is placed on the assessment roll of the county, but men with some money and brains enough to make it *stick*. Such men, with their families, can certainly find and make desirable and happy homes here, where nature is not miserly with her gifts. However, there are plenty of opportunities of investment to the heavy capitalist, but they are of the few, and are able to look the field over for themselves; we are giving information to the many. And of laborers, steady, temperate, and industrious, are the kind needed. The laborer is always worthy of his hire, and he will be respected if he respects himself and his occupation. There is little danger of an over-supply of that kind, but we have enough of the kind that spend all their wages at the saloon, as long as they are able to earn wages, and then, when they get the "jim-jams," and the physician gets them up, "skip the town" to prevent paying their honest bills. Yes, of that class, we have enough and to spare.

Well might the settlers of the Upper Sacramento Valley have exclaimed "Eureka!" when they saw the monarch oaks of the soil, under whose shade they rested to contemplate the hoary heads of the bold sentinels that stand guard on either side, while the valley, itself, was carpeted with all the variegated beauties of spring verdure.

The northeast corner of Tehama County is boldly marked by that majestic peak, Mount Lassen—nearly 11,000 feet high—from whose base numerous mountain streams of crystal clearness take their rise, and flow in a southwesterly direction into the Sacramento River. Of these streams, Battle, Payne's, Antelope, Mill, and Deer Creeks flow through this county and empty into the Sacramento, within its boundaries and within seven or eight miles of one another. On entering the valley, these streams, from their great carrying powers and the effects of attrition, afford particular and remarkable characteristics, of which advantages the farmers contiguous thereto have, in numerous instances, taken occasion to improve. The soil along these streams is what we usually understand by the term "made." It is made up from the attrition of matter through which the streams have passed in their rapid descent to the valley, and is, for the most part, decomposed lava, granite, and vegetable matter. It is of a light, friable nature, precluding the necessity of any kind of underdrainage before it is fitted for the important cultivation to which it is so well adapted. The margin of these streams was originally well timbered with oak, sycamore, elder, and cottonwood, with interspersed spots of dense thickets, through which the wild grapevines wandered in luxurious abandon; once defended by the almost impregnable hedges of the wild blackberries. The early settlers ate their first pies made from elderberries picked from "trees."

On Deer Creek the parched and weary emigrant stopped to recruit, and wash up, just having arrived by the Lassen trail, now scarcely existing

only in remembrance; but while names do not change, conditions do. Were Deer Creek, which derives its name from the vast herds of these animals, to be rechristened, doubtless it would receive the appellation of "Peach Tree Creek." Taking the hint from the free bounty which nature offered in her wild and aboriginal condition, the settlers planted small orchards and vineyards of many varieties, around which there grew, as from a nucleus, the present fruit and wine industry, which is only outlined in the "Sentinel." Peter Lassen made a journey to Los Angeles and returned on horseback, in order to bring a few hundred grape cuttings. The grafts for the first orchards were brought from Missouri. It is from such small events that the business has assumed its present proportions. As there are nearly two thousand acres devoted alone to the peach, although other fruits are cultivated, it leads the lists of drupaceous fruits, by all odds.

The present resources of this section of the great, but, with the equitable temperature, admirable system of irrigation, variety and productiveness of soil, facilities for transportation of products to the parched south or frozen north, there is no reason why this locality should not take and hold the front rank as a fruit and wine producing locality in northern California, as it has in Tehama County. There is scarcely a kind or variety known in the catalogue, that will not flourish in this locality. The orchards of which we speak are situated on either side of Deer Creek, and, where a few years ago there were waving fields of wheat and barley, there are now long avenues of fruit trees. For growing fruits, it is considered by those known to the facts, that this section is unsurpassed.

Vegetation is two weeks earlier here than on Butte Creek, twenty-four miles south of here. The same variety of fruit which came from trees propagated in the same nurseries are from ten to twenty days earlier here than in the Santa Clara Valley. Here apricots are frequently ripe enough to ship by the fifteenth of June, while in the bay counties they are not sufficiently matured until the first or second week in July. The Briggs Red May is a real May peach, and the Amsden June comes very nearly being Amsden May. The same can be said of the earlier varieties of grapes. Deer Creek is to this upper part of the State what Vaca Valley is to the bay counties. This is owing to the peculiar physical conditions of the country. As to quality, all the pitted fruits cannot be excelled anywhere in the State, or even in the famous fruit regions along the Ohio and Tennessee Rivers. Their fine flavor and luscious vinousness is remarked by every one who, for the first time, tastes the fruit. This makes them eagerly sought after by the dealers, for canning purposes, but it is rather far to ship to the city for that purpose.

The cherry is quite prolific; plums and prunes also receive some attention: almonds are a sure crop, and are destined to come into more prominent notice; nectarines may be classed with peaches, in a general way, for whatever may be said of the peach, the same can as truthfully be said of the nectarine; walnuts, both English and California, fruit early and regular, but the trunks of the former are retarded by the hot sun: oranges and olives will grow here nicely, but they are not raised for profit, although we think the latter will be grown extensively in a few years.

The leading varieties of the peach are what are known as the Crawford—both the early and the late—but some kinds of peach, which have been planted for local demand, could be found almost any time from the middle of May till the last week in November—a season of six months. To a Californian there is nothing surprising about such a statement, but to our eastern friends, that are cracking hickory nuts—and jokes—that were gathered after the windfalls of September, and are drinking hard cider

rather than water distilled through the pores of the vine, it may be a joke that they can scarcely crack or a draught too large to swallow.

In a few years the apricot will be cultivated to an equal extent with the peach. The almond, being a hardy grower, will be planted more extensively in the heavier soils, as will also the Bartlett pear. The aim, in general, of our orchardists, has been to confine themselves to one line, rather than to cover the whole field, and the wisdom of this decision appears more fully when they come to count up the profits at the end of the year. While the young trees are growing into full bearing, which is usually from three to five years, the ground is cultivated and usually planted to potatoes and all kinds of garden vegetables, as beets, beans, cabbage, onions, tomatoes, etc., two crops being frequently harvested in the same season—usually a crop of late potatoes follow the early vegetables. One of the best crops to raise among trees is peanuts, because they must be kept free from weeds and require such thorough cultivation.

ANNUAL METEOROLOGICAL REVIEW.

The following table shows the climatic condition in all its features for ten years, from 1877 to 1887, both years inclusive, at Red Bluff, California, compiled by George D. Butcher, Observer Signal Corps:

ANNUAL WEATHER REVIEW FOR:	1877.*	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Average barometer		29.58	29.64	29.65	29.65	29.64	29.67	29.62	29.65	29.65	29.64
Highest barometer	30.03	30.14	30.30	30.14	30.12	30.14	30.34	30.22	30.09	30.10	30.14
Lowest barometer	29.23	29.00	28.97	29.03	29.19	29.30	29.21	28.98	29.07	28.99	29.08
Range of barometer		1.14	1.32	1.11	.93	.85	1.13	1.24	1.02	1.11	1.06
Average temperature		64.0	63.3	61.2	62.1	60.2	61.5	60.8	64.4	63.2	64.4
Highest temperature	108.0	110.5	110.0	108.0	103.0	105.0	107.0	107.0	108.0	109.0	111.5
Lowest temperature	32.0	25.0	25.0	26.0	31.0	25.0	19.0	22.0	33.0	30.0	27.3
Range of temperature		85.5	85.0	82.0	72.0	80.0	88.0	85.0	75.0	79.0	84.2
Greatest monthly range of temperature	54.0	55.0	54.0	53.5	53.0	57.0	58.0	57.0	56.0	54.4	70.4
Least monthly range of temperature	34.0	25.0	36.0	27.5	32.5	30.0	39.0	35.5	32.5	34.5	35.9
Average maximum temperature		86.9	89.2	86.7	86.0	83.7	87.2	72.0	75.3	76.2	75.6
Average minimum temperature		41.4	41.3	39.8	41.1	39.5	39.8	49.7	52.8	52.4	51.4
Average range of temperature		45.5	47.8	47.0	45.1	43.9	47.3	44.0	44.8	46.6	50.0
Average humidity		53.2	52.5	51.4	55.1	58.0	55.1	59.3	57.5	55.3	47.0
Average dew point							41.5	43.5	45.2	42.8	39.5
Prevailing direction of wind	N.	N.	N.	N.	N.	N.	N.	N. S.	S.	N.	N.
Total precipitation	8.54	49.01	33.64	26.53	24.93	21.82	13.76	28.06	29.63	17.21	13.60
Total velocity of wind	28.805	70.220	a	b20.379	49.088	45.879	54.948	58.145	51.924	54.690	63.705
Maximum velocity of wind	30	46	52	60	42	40	36	48	44	50	45
Direction at time of maximum velocity	N.	S.E.	S.	S.E.	S.	S.	S.	S.	S.	S.E.	N. S.
Total number of clear days	128	232	207	230	204	215	261	225	223	212	213
Total number of fair days	32	72	90	74	103	89	67	84	96	91	98
Total number of cloudy days	24	61	68	55	58	43	37	53	46	59	54
Total number of foggy days	a	a	a	a	0	0	5	0	2	2	0
Total number of days of precipitation	27	79	83	66	72	69	44	71	70	63	57
Number of earthquakes	0	2	0	0	2	0	0	1	0	0	2
Snow storms	a	a	a	a	a	0	0	1	0	1	2
Thunder and lightning	a	a	a	a	a	7	7	7	7	3	5
Number of solar halos	a	a	a	a	4	9	0	0	0	0	2
Number of lunar halos	a	a	a	a	3	2	3	5	2	14	14
Number of light frosts	a	a	a	a	17	19	9	21	16	14	10
Number of killing frosts	a	a	a	a	4	10	37	15	3	6	18
Number of days maximum temperature above 90°	69	93	84	71	59	60	94	53	77	89	99
Number of days minimum temperature below 32°	0	12	16	26	1	17	33	15	0	7	12
Highest water in the river during each year					c28.6	c12.0	c13.0	c21.0	d21.1	d20.5	d18.3
Lowest water in the river during each year					c1.1	c0.10	c0.6	c0.10	d0.3	d0.3	d0.4
Range of water in the river					c27.5	c11.2	c12.6	c20.2	d20.8	d20.2	d17.9

* Station opened July 1, 1877—Six months, 1877. a No record. b Five months. c Feet and inches. d Feet and tenths.

RED BLUFF, TEHAMA COUNTY.

This table is made up from the Signal Service records, and shows the total rainfall for each calendar year from 1878 to date, and the rainfall by seasons from 1877-78 to date: also the totals for each month, with the averages from the opening of the Signal Office on July 1, 1877, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season.
1877							.05	.03	none	1.35	3.13	3.98			
1878	20.71	16.66	4.16	2.21	.89	none	none	none	.42	1.56	1.66	.69	48.96	1877-78	53.17
1879	3.18	3.67	5.39	2.12	2.18	.30	.04	.28	sprin.	.48	6.05	0.95	33.64	1878-79	21.17
1880	2.01	1.66	1.70	7.05	1.04	none	none	none	none	.01	.14	12.85	26.53	1879-80	30.26
1881	9.40	2.79	.51	1.83	.79	.51	sprin.	none	1.07	1.68	.75	5.69	24.93	1880-81	28.90
1882	2.81	3.94	2.67	2.12	.33	.15	none	none	.49	2.80	5.07	1.44	21.82	1881-82	21.12
1883	.87	.39	2.60	1.96	2.96	none	none	none	1.04	2.68	.74	.52	13.76	1882-83	18.58
1884	3.55	2.21	7.81	4.31	.18	.97	none	none	.36	.90	.04	7.73	28.06	1883-84	24.01
1885	1.84	1.19	sprin.	.62	.64	1.37	.05	none	2.91	.10	17.05	3.90	29.67	1884-85	14.69
1886	4.80	.18	1.31	4.12	.73	sprin.	sprin.	sprin.	none	1.76	.31	3.94	17.18	1885-86	65.15
1887	.57	5.21	1.13	1.76	.77	.26	sprin.	sprin.	.06	none	1.52	2.32	13.60	1886-87	15.74
Totals.	49.74	37.90	27.28	28.10	10.51	3.56	.14	.31	6.35	13.32	36.47	53.01	238.15		252.79
Av'g's.	4.974	3.790	2.728	2.810	1.051	.356	.013	.028	.577	1.211	3.315	4.819	33.815		25.279

RED BLUFF WEATHER SUMMARY FOR 1887.

Compiled in the office of the officer in charge of the Pacific Coast Division Signal Service, by H. E. Wilkinson, Observer Signal Corps:

Table Showing, by Months, the Meteorological Conditions for the Year 1887, at Red Bluff, Obtained from the Records of the United States Signal Service.

MONTHS.	Mean Monthly Temperature	Maximum Temperature	Minimum Temperature	Number of Days Temperature was Above 90°	Number of Days Temperature was Below 32°	Mean Monthly Relative Humidity	Prevailing Wind Direction	Wind - Highest Velocity	Number of Clear Days	Number of Fair Days	Number of Cloudy Days	Total Number of Days upon which Rain Fell.	Number of Foggy Days	Total Rainfall
January	48.7	70.8	30.5	0	3	64.4	N.	36	12	13	6	6	0	0.57
February	43.4	68.6	27.8	0	6	72.3	S.	40	7	7	14	15	0	5.21
March	58.9	79.8	39.2	0	0	57.2	N.	28	14	12	5	5	0	1.13
April	60.2	89.8	38.0	0	0	47.9	N.	30	15	9	6	6	0	1.76
May	68.8	110.4	40.0	7	0	43.8	S.	29	15	11	5	5	0	0.77
June	77.1	105.2	47.2	19	0	34.4	N.	29	18	11	1	4	0	0.26
July	83.9	111.5	55.8	29	0	35.8	S.	36	29	2	0	0	0	T.
August	81.3	107.4	55.0	24	0	34.8	S.	22	30	1	0	0	0	.00
September	76.4	101.3	48.5	15	0	32.5	N.	36	22	7	1	3	0	0.06
October	71.1	96.0	47.3	6	0	26.9	N.	42	23	8	0	0	0	.00
November	55.2	80.5	27.3	0	2	46.5	N.	36	17	7	6	6	0	1.52
December	48.2	67.7	31.8	0	1	67.4	N.	45	10	10	11	11	0	2.32
Sums	773.2	1089.0	488.4	100	12	563.9		409	212	98	55	61	0	13.60
Means	64.4	90.8	40.7	8.3	1.0	47.0	N.	34.1	17.7	8.2	4.6	5.1	0	1.13

SHASTA COUNTY.

Shasta County, situated at and comprising the head of the Sacramento Valley, is one of the largest and most sparsely settled counties of the State. Since the days of '49 and '50, it has been famous for the richness of its placer mines, and the amount of wealth in gold taken from its streams, gulches, and flats is inestimable. With the decline of its placers, the great resources of its mineral wealth in numerous and extensive deposits of precious metals in ledges and lodes began to attract the attention and are now rapidly engaging the devotion of capital and industry. Notable among later discoveries is Iron Mountain, which in reality is a mountain of silver, gold, and copper-bearing ore, situated seven miles north from the town of Shasta, the county seat. The estimates of the value of the Iron Mountain Mine, made by mining experts and by cautious and by careful assayists, are simply fabulous.

A WORD TO HOME-SEEKERS.

With an area as large as that of some of the smaller States, the resources of the county are not comprised in its mineral deposits. Although for the greater part mountainous, it has thousands of acres of valley and bottom lands, a large portion of which is under prosperous and thrifty cultivation. Some of the best and largest tracts of such lands are, of course, occupied, but there are many ample parcels in various nooks and mountain valleys, that need only a fair outlay of time and labor, by men of proper energy and thrift, to transform them into homes that should content and make happy the proudest of mankind. Here, as elsewhere over the world, homes are not made in a season or a year, but patience, energy, and industry are offered no surer reward, go where they may.

There is no better climate, more healthful, pleasant, or picturesque section, and yet in its infancy in comparison with the thickly settled portions of the State. It has territory and means of support for ten times its present population.

The California and Oregon Railroad, recently extended through the county, makes accessible a section delightful for summer resort, and offers primal inducements to tourists and sportsmen. The territory traversed by the railroad, up the winding Sacramento, almost to its source, is grand in rugged scenery, delightful in summer—under the white dome of Mount Shasta—a land of evergreen hills, glistening peaks, little valleys, and tumbling, ice-cold trout streams.

REED'S RAILROAD CAMP, UPPER SACRAMENTO RIVER.

The following interesting rain data from Reed's Camp, on the Upper Sacramento River, shows that heavy annual rainfalls are a very usual occurrence at that point, according to the observations made by L. Aultenreith. The table extends from January, 1880, to December, 1884, and shows the averages by months, years, and seasons. From 1882 to 1884, the record was kept at Dog Creek, near Reed's Camp:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1880---	8.60	3.34	8.32	19.26	none	none	none	none	none	none	none	32.07	71.59	-----	-----
1881---	31.76	14.14	8.04	5.99	.80	2.66	none	none	2.17	7.16	5.65	8.00	86.37	1880-81	95.46
1882---	5.07	15.37	13.01	4.11	5.28	none	.08	none	.10	9.20	8.14	3.94	64.30	1881-82	65.90
1883---	1.00	none	14.46	8.49	9.94	none	none	none	none	6.18	1.10	4.24	45.41	1882-83	55.27
1884---	15.57	4.55	13.44	16.55	2.73	7.12	.25	none	1.03	7.99	2.32	19.70	91.25	1883-84	71.73
Totals.	62.00	37.40	57.27	54.40	18.75	9.78	.33	none	3.30	30.53	17.21	67.95	358.92	-----	288.36
Averages	12.400	7.480	11.454	10.880	3.750	1.956	.066	none	.660	6.106	3.442	13.590	71.784	-----	72.090

TABLE SHOWING THE AVERAGE AND HIGHEST AND LOWEST TEMPERATURE AND RAINFALL FOR THE SACRAMENTO VALLEY COUNTIES.

STATIONS AND COUNTIES.		Elevation—Feet	Average Winter Temperature	Average Spring Temperature	Average Summer Temperature	Average Autumn Temperature	Average Annual Temperature	Highest Temperature	Lowest Temperature	Average Seasonal Rainfall—Inches
<i>Shasta County:</i>										
Redding	-----	565	47.8	61.1	81.0	65.3	63.8	110	18	36.66
Anderson	-----		50.0	59.3	80.7	60.2	62.6	114	20	39.97
<i>Tehama County:</i>										
Tehama	-----	220	47.7	61.9	81.3	64.1	63.8	115	21	15.39
Red Bluff	-----	307	46.8	59.8	79.7	63.2	62.4	110	16	27.46
<i>Butte County:</i>										
Chico	-----	193	47.3	62.4	81.3	64.2	63.8	110	18	20.84
Oroville	-----	171	52.0	64.5	78.8	64.3	64.9	102	20	22.11
<i>Colusa County:</i>										
Princeton	-----	67	48.2	61.4	78.7	63.3	62.8	114	20	15.25
Williams	-----	89	47.4	61.6	79.7	63.9	63.2	114	19	12.09
Willows	-----	132	45.8	63.1	81.3	63.4	63.4	112	19	12.03
Orland	-----	254	51.9	65.1	82.9	67.9	66.9	113	22	16.36
College City	-----		48.4	63.3	76.6	60.9	62.3	114	20	16.35
<i>Sutter County:</i>										
Nicolaus	-----	40	50.9	57.7	77.7	61.7	62.0	111	18	19.57
<i>Yuba County:</i>										
Marysville	-----	69	50.1	62.7	78.3	65.6	64.2	108	18	16.00
<i>Placer County:</i>										
Rocklin	-----	249	46.9	61.4	78.3	63.0	62.4	114	19	19.45
Auburn	-----	1,363	46.2	56.4	74.3	61.7	59.7	106	13	33.15
Colfax	-----	2,421	46.0	55.9	76.0	60.2	59.5	106	16	45.16
<i>El Dorado County:</i>										
Georgetown	-----	2,750	50.0	59.0	85.0	67.0	64.0	102	11	60.04
<i>Amador County:</i>										
Ione	-----	287	49.1	60.5	78.0	64.6	64.0	110	19	20.06
<i>Sacramento County:</i>										
Sacramento	-----	35	48.3	59.5	71.6	61.6	60.2	106	19	19.80
Galt	-----	49	48.5	61.7	76.4	62.6	62.3	108	19	15.70
Brighton	-----	53	47.4	59.9	74.8	61.9	61.2	109	19	16.44
<i>Yolo County:</i>										
Knight's Landing	-----	35	48.0	60.6	75.9	63.0	61.9	110	20	16.77
Woodland	-----	45	48.3	61.6	77.7	63.8	62.8	106	18	16.59
Davisville	-----	51	49.7	62.4	77.0	65.7	63.7	118	19	15.95
Dunnigan	-----	65	47.8	63.6	79.9	65.4	64.2	118	20	16.48
<i>Solano County:</i>										
Fairfield or Suisun	-----	11	49.7	61.4	73.1	65.2	62.4	110	18	20.10
South Vallejo	-----	23	50.0	59.5	66.8	61.4	59.4	105	24	14.32
Benicia	-----	64	46.6	56.8	67.6	60.7	57.9	105	26	15.97

Average Precipitation in Shasta County.

	January	February	March	April	May	June	July	August	September	October	November	December
Delta.....	8.28	2.27	13.95	12.52	6.33	3.56	0.12	none	0.05	7.69	4.62	4.09
Fort Crook.....	3.86	3.19	3.32	1.59	1.25	0.57	0.25	0.02	0.39	0.97	2.81	5.10
Fort Reading.....	4.88	3.27	3.91	3.92	2.85	0.13	none	0.06	0.16	0.69	3.20	5.78
Redding.....	8.04	4.98	5.35	3.25	1.53	0.49	0.06	0.08	0.46	3.01	4.07	5.46
Reed Camp.....	12.40	7.48	11.45	10.88	3.75	1.95	0.06	none	0.51	4.80	5.00	9.85

NORTHERN CALIFORNIA, CLIMATE, RESOURCES, ETC., AS REPORTED FROM MODOC AND SISKIYOU COUNTIES.

MODOC COUNTY.

It is the extreme northeast county of the State, with Oregon for its northern boundary. It extends eastward from the celebrated Modoc "lava bed," south of Tule Lake, to the Nevada State line, and is nearly one hundred miles in length, and sixty miles in width. The topography of the county is a succession of mountain ranges and valleys, and is principally drained by Pitt River, which has its outlet in the bay of San Francisco. The lava bed section, at the northeast corner of the county, is a succession of gulches and crevasses, which range from a few feet to one hundred feet in width, and many of them are one hundred feet deep; some have subterranean passes, which lead for miles under the rocks. This broken country extends in a belt eastward to Goose Lake. This lava section of the county has no arable lands, and it is fit only for grazing purposes. It is a vast plain of table land, and in some places it is sparsely covered with juniper.

The county has an area of 4,260 square miles, of which 3,685 square miles are Sierra mountain lands. Surprise Valley has 400 square miles, and the other valleys some 175 square miles.

The agricultural lands suitable for cultivation are all in these valleys, of which Surprise Valley is the most important. It lies on the extreme east of the county, extending from north to south, and includes in its eastern side three lakes, whose lengths are respectively 16, 20, and 15 miles, with widths of from 3 to 5 miles. These lakes have no outlet, and are sometimes dry by evaporation. The length of the valley is about 60 miles, and width 15 miles, and it is skirted on two sides by lofty and timbered mountains. It is watered by numerous streams, and it is covered with clover and grasses. Its soil is a rich, black loam, occupying a strip from 2 to 6 miles in width, whose surface gently slopes toward the lakes.

The valley of Goose Lake lies mostly on the eastern side of the lake (which is 30 miles long and 15 miles wide, extending into Oregon), reaching back some 4 or 5 miles, and is watered by numerous small streams. Its lands are good for farming purposes, being covered with bunch and other grasses, and are partly under cultivation, yielding crops of wheat, barley, oats, etc.

The adjoining mountains, Warner's Range, are heavily timbered with

cedar and pine, while on the hillsides and around the lake is an abundant growth of wild plums. On the western side of the lake there is a narrow strip of valley, devoted mostly to dairying. Big or Round Valley, on Pitt River, in the southwestern part of the county, and reaching into Lassen County, is 30 miles long and 18 wide, and is mostly covered with sage-brush. Its soils are varied in character, from red clays to dark loam and gravelly lands, and spotted with alkali tracts. Surrounding the valley are several creeks, whose rich bottom lands are to some extent under cultivation. According to reliable information, it sells upward of 20,000 head of beef cattle, and as many head of horses, to say nothing of the sheep, poultry, and products of the soil. With a good railroad, these sales would be largely increased, for the neighboring mountain sides give a boundless range rich in nutritious grasses, while the valleys furnish a well nigh inexhaustible supply of the best of hay. Given a railroad, Modoc County would soon become one of the wealthiest in California. Its trade should go to San Francisco, and a railroad giving it communication with that city, would pay from the beginning. The tillable land of Modoc County is equal to any in productiveness and is easily cultivated. Thousands of bushels of potatoes are raised here, and tubers weighing over four pounds are not uncommon. Modoc's potatoes have a State reputation. Other crops do as well, but want of a market causes but little more wheat and barley than is needed for home consumption to be raised. With a good market, Modoc County would raise millions of bushels of grain. Surprise Valley, 25 miles northeast of Alturas, abounds in orchards, and raises large quantities of apples, said to be the best produced in the mountain districts of the State. The county has many young orchards which will come into bearing in a few years, when Modoc will assume no inferior position as a fruit-producing county. In addition to apples, an abundance of peaches, pears, cherries, strawberries, and other small fruits are grown.

But little irrigation is necessary, as the county is well watered by the Pitt River, which has its source within the confines of the county, and numerous other streams which come down from the mountain sides. Good water is obtained at a depth of from six to thirty feet, while good springs are numerous. Modoc County has several hot springs, said to possess wonderful medicinal properties, curing rheumatism and skin diseases with marvelous rapidity. As yet, however, these hot springs are but little resorted to, owing to the lack of suitable improvements and accommodations. When they are fitted up and put in proper shape, we may look for an influx of invalids, gouty and rheumatic cripples, and pleasure seekers. The mountains are clothed in timber of various kinds, enough to furnish the inhabitants of the county with wood and lumber for hundreds of years to come, and though there are no mines in the county, pieces of rich ore have been picked up in many of the watercourses, and prospectors are endeavoring to find out where they came from. Should their home be discovered, look out for a mining boom, for the chunks aforementioned assayed very big, one of them to the tune of \$25,000 to the ton. The land known as sage-brush land is being taken up by homesteaders, and where properly cleared, irrigated, and cultivated, raises enormous crops of timothy and grain hay, or potatoes. In fact, Modoc County seems to be the natural habitat of this useful vegetable. Think of five tons from four sacks, and the crop not cultivated—just planted and left to take care of itself. There are still thousands of acres untaken that are capable of this. The man who comes here with a small capital, and a willingness and expectation to do some hard work before he reaps a harvest of \$20 gold

pieces, can but succeed, and will eventually receive the reward of his work and make himself a home worth having.

Another industry that could be followed with profit in Modoc County, is dairying. The wild grasses even produce a splendid quality of butter or cheese, which latter finds a ready market at 18 cents per pound here in the country. There is plenty of room for dairies here, and but little prospect of the business being overdone for many years yet.

ANNUAL METEOROLOGICAL REVIEW.

The following table shows the climatic condition in all its features for two years, from 1886 to 1887, both years inclusive, at Fort Bidwell, California, and furnished by Thomas J. Patterson, Observer Signal Corps:

ANNUAL WEATHER REVIEW FOR:	1886.	1887.	ANNUAL WEATHER REVIEW FOR:	1886.	1887.
Average barometer.....	25.407	25.400	Maximum velocity of wind.....	30	50
Highest barometer.....	25.838	25.79	Direction at time of maximum velocity.....	W.	S.W.
Lowest barometer.....	24.709	24.71	Total number of clear days.....	179	165
Range of barometer.....	1.129	1.08	Total number of fair days.....	104	124
Average temperature.....	48.1	47.6	Total number of cloudy days.....	82	76
Highest temperature.....	95.0	94.0	Total number of foggy days.....	none	none
Lowest temperature.....	-4.0	-2.0	Total number of days of precipitation.....	108	86
Range of temperature.....	99	96	Number of earthquakes.....	none	none
Greatest monthly range of temperature.....	62.6	72.6	Snowstorms.....	39	48
Least monthly range of temperature.....	38.8	41.8	Thunder and lightning.....	9	16
Average maximum temp'ture.....	60.2	60.4	Number of solar halos.....	none	none
Average minimum temp'ture.....	36.2	33.8	Number of lunar halos.....	9	4
Average range temperature.....	51.5	55.9	Number of light frosts.....	7	5
Average humidity.....	56.1	64.9	Number of killing frosts.....	12	25
Average dew point.....	30.1	34.4	Number of days maximum temperature was above 90°.....	9	9
Prevailing direction of wind.....	W.	W.	Number of days minimum temperature was below 32°.....	145	166
Total precipitation.....	20.96	16.51			
Total velocity of wind.....	44.093	59.710			

Average Precipitation in Modoc County.

	January	February	March	April	May	June	July	August	September	October	November	December
Fort Babbitt.....	1.63	0.68	2.24	0.31	0.20	0.15	0.08	0.10	0.21	0.25	2.75	3.17
Fort Bidwell.....	4.15	2.71	2.19	1.57	1.33	1.00	0.27	0.21	0.38	1.04	1.99	3.22

SISKIYOU COUNTY.

A MOUNTAIN OF MARBLE IN SISKIYOU COUNTY.

The following interesting description of Marble Mountain in the Scott Valley of Siskiyou County, which blends so nicely and instructively with the Indian legend connected therewith, was written by Mr. Isaac A. Reynolds, attorney at law, of Fort Jones:

There are few regions of country more rugged and mountainous than that lying just to the westward of Scott Valley, in Northern California.

The whole wide landscape appears to have been formed by some mighty convulsion of the earth that has thrown up numerous spurs or broken ranges of mountains to the height of from 7,000 to 9,000 feet, and piled them together in strange confusion. During the winter and early spring months, they are covered by an immense fall of snow, that renders them a dreary and desolate waste, uninhabitable to man or beast. But it rapidly disappears under the bright, warm rays of the summer sun, and by the middle of July is almost entirely gone, and valley glade and glen are robed in a mantle of verdure, in which are mingled the choicest of wild flowers. Here and there in the more elevated spots, the snow lingers in great banks throughout the season, but they only serve as refrigerators to lessen the otherwise oppressive heat of the summer time.

There is a mountain standing in the midst of this Alpine region, that presents one of the strangest and most interesting phenomenon found in nature's architecture. It is familiar to most of the older inhabitants of the neighboring valleys, under the double appellation of Marble or White Mountain.

The former of these is the more classical name, given it by the white man, while the latter is the simple term by which it has from time immemorial been designated by the Indians. As is common with everything strange or wonderful in nature, they look upon it with superstitious awe and veneration, associating many wild and romantic legends with its history. When viewed from a distance, it has all the appearance of a barren and craggy height, whose summits have lately been covered with snow: but upon near approach, it proves to be the natural color of the rock which composes it, for it consists of an immense upheaval of limestone rock, which under the influence of heat and pressure has been partially metamorphosed into marble, of which nearly every description can be found, from the coarser, rougher qualities, to that of monumental purity. Winter and summer, it presents the same cold and gloomy-like grandeur that readily distinguishes it from all of its surroundings. Indeed, from its peculiar appearance in this respect, it long served as a kind of landmark or guide to the earlier pioneers who first ventured into these mountain fastnesses.

The old Kelsey trail, which is one of the first trails ever blazed out across these mountains into Scott Valley, lies almost directly at its base, and few who ever passed that way, but checked his mule to gaze upward with wonder and amazement at its beetling cliffs and towering domes. But this route, at best, was a rugged and dangerous one to both man and beast, and as much more accessible passes were soon discovered through the mountains, it was long ago abandoned, since which time it has been visited only by the hunter in quest of game, or some occasional adventurer seeking the sublimest of nature as portrayed in these vast solitudes. The mountain rises in the form of a crescent, with its concave side facing the setting sun, and has an altitude of fully 8,000 feet above the level of the sea. It is easy of access from the eastern and southern sides, sloping up gradually, terrace after terrace, to its very summit. Along the gradual acclivities, the melting snows of centuries have cut deep and dark crevices and caverns in the soft limestone rock, into some of which, if a stone be dropped, the faint, hollow rumbling, far beneath your feet, tells to what unknown depth they have been worn.

But upon reaching the top, the whole scene changes, for, instead of a gradual descent, the traveler finds himself standing upon the brow of a perpendicular escarpment, varying in altitude from 500 to 1,000 feet, and extending entirely round the mountain, a distance of more than three miles. From the foot of this cliff, there is a steep and rocky declivity for

a short distance, when you meet with a second perpendicular precipice running parallel with the one above it, and of about half its altitude. At the foot of this second cliff, spreading out with a comparatively level surface, lies a beautiful and fertile valley, adorned and beautified with clusters of evergreens, in the center of which is a picturesque and lovely tarn, within whose clear and transparent waters, at all hours of the day can be seen mirrored, in all their strange magnificence, the surrounding cliffs that hem it in. A feeling of awe takes possession of the soul as you gaze upward at these vast overhanging walls. It seems as though nature had reared this silent retreat where man should never intrude. The scene, as viewed from the summit, is one of the most sublime and beautiful which the mind can picture.

Spread out before you like a map, are all those wild and romantic scenes peculiar to Alpine regions, which so charm the eye and enwrap the soul of man. Craggy heights, towering upward from amid deep, dark forests of evergreens, that hang like shadows around their bases and sides—lonely and unfrequented lakes hemmed in by beetling walls of rocks—nameless and untrodden valleys, where the deer, bear, and elk still roam in all their native freedom—and wild and foaming streams, winding downward from their native tarns, now plunging over steep and rocky cliffs, forming lofty cascades, whose voices awaken the echoes far and near, and again winding in solemn murmurs through the deep recesses of the mountains, all come within a single sweep of the vision.

Marble Mountain rises the colossal figure of the whole scene, with its snow-white domes towering upward to the very clouds, like guardian sentinels over the surrounding country. Long after the shadows of twilight have gathered in the deep ravines and dark cañons below, the sunlight still lingers amid its elevated spires, as though posing to take a parting glance ere its departure on its journey through space.

Near the northern border of the mountain, there is a tremendous chasm of about 500 feet in depth, and 1,000 feet in width, known by the Indian name of "*Ish-ne-quah-ish*." It appears to have been formed by the rush of mighty waters that have long ages since subsided, and reaches entirely through the solid wall of rock, thus dividing the mountain as it were in twain. The Ottitiewa, or Scott Valley Indians, have a strange and curious legend among their traditional history, concerning the naming of this rugged defile. According to this legend, there lived long years ago, among that tribe, an Indian by the name of Wahahshun, or Strong Arm, as the name is interpreted by them. He received his name from the immense power he displayed in the use of his bow. From early boyhood he surpassed all his playmates in this respect, and when he had arrived at the age of manhood, no one was found, far or near, who could successfully cope with him either in the chase or in shooting at a mark.

At all their festive gatherings, he bore off the palm, until at last he stood the acknowledged champion without a competitor. Nor was he lacking in any of those essential traits of character which go to make up a renowned warrior. He possessed a brave and daring spirit that shrank from no danger. Armed with his trusty bow, he feared nothing which might roam the forest. On more than one occasion, he attacked single-handed and alone, the savage grizzly, and laid him dead at his feet with an arrow through his heart.

It was in the fall of the year, and the Ottitiewas had followed the game from the parched and dried up foothills of the lower valley into the fresh green pastures among these wild highlands. Their village was pitched at the eastern base of Marble Mountain. One day, Wahahshun, with two

companions, sallied forth for a hunt. In the circuitous route they traveled, they at last found themselves in the little valley I have mentioned, which lies nearly inclosed by the circling walls of the mountain. Here they had the good fortune to come upon a band of elk, and Wahahshun's strong bow and sure arrow soon laid two of them upon the fresh green sward. Loading themselves with the choicest portions, they set out on their return to the village. There is a narrow, but dangerous path leading through the chasm of Ish-ne-quah-ish, well known to the Indians, along which any one who has a steady head and sure foot, may pass in safety, but a single misstep might precipitate the traveler hundreds of feet down the rocky gorge. They chose this dangerous pathway, rather than the more circuitous one around the mountain, for it saved a distance of more than three miles. When they had gained the highest part of the pass, they were glad to throw themselves in the cool shade of the overhanging bluff, for rest and refreshment, for it was yet in the heat of the day. As they lay here, taking their rest, the conversation turned upon the success of their day's hunt. Wahahshun, who, moreover, was a great brag, was more than usually boastful of his powers. He declared that they had never yet seen him fully tested; that he could perform much more wonderful feats than they had ever yet beheld, and wound up by saying that he could kill a deer as far as they might point it out to him.

"It is true, indeed," replied one of his companions, "that you have a strong arm—that you can kill game much farther than we, but there are things which are beyond even your power to do. Look," said he, pointing to the opposite cliff, "should a deer be standing upon yonder height, he would be beyond your harm, your longest arrow would not reach him." Wahahshun sprang to his feet in an instant, and hastily snatching an arrow from his quiver, he fitted it to his bow, and drawing it to its very beard, sent it singing up the cliff, until it landed fairly upon its brow; and from that hour it has been called by the Indians, "Ish-ne-quah-ish," or, "*Where the arrow was shot.*"

Romantic and traditional as may be this legend, it gives us a link in the unwritten history of that unfortunate race who once dwelled within these mountains, and who are now so rapidly disappearing from among us. It moreover connects with the whole, the kindred feeling of humanity, which must ever lend to it its chief interest.

Here then, they dwelled; beside every stream they pitched their rude and primitive huts. Every valley has resounded with their wild and enthusiastic songs of grief and joy, and every mountain side has echoed their savage war whoops, as they engaged in the bloody contests, to satiate their deadly and hereditary feuds. Their hardships and dangers on their lonely hunts—their gloomy superstitions—their wild and savage sports—their strong attachments to their hunting grounds, all go to make up their unwritten history. How strangely do these stirring scenes compare with the solemn stillness which now reigns around this mountain, once their favorite hunting grounds. One by one, like the strong arm which once sent the arrows up the cliff, they have taken their places in the silent halls of death, until now but a few remain to tell of their once numerous people. But it presents the same unchanged appearance now, as it did upon the birthday of our race. This leads the mind up to those sublime thoughts of that Being who piled these massive cliffs upon each other, and broke the mountain asunder, and at the same time reared to Himself a monument, grand, gloomy, and peculiar, that shall stand forever as an emblem of His mercy and goodness to man.

SCOTT VALLEY, SISKIYOU COUNTY.

The rainfall for Scott Valley, Siskiyou County, was tabulated from the observations taken by Mr. Isaac Titcomb, of Walla Walla Creek, eight miles northwest of Fort Jones, beginning with August, 1859, being continuous to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season.
1859								.50	.87	1.00	4.33	.75		1859-60	18.66
1860	2.59	1.25	4.12	.75	2.00	.40	1.62	.24	.49	2.22	2.00	5.74	23.52	1860-61	22.27
1861	1.12	2.50	2.50	3.00	.54	.30	none	none	none	.51	11.56	10.63	32.66	1861-62	40.86
1862	9.29	3.75	1.32	2.00	1.00	.80	.10	none	.02	.15	.12	1.90	20.45	1862-63	15.57
1863	4.75	1.75	2.45	2.00	.40	1.93	.25	.09	.40	.25	1.85	6.17	22.29	1863-64	15.85
1864	2.07	.43	.82	2.70	.51	.31	none	.03	.04	.31	6.00	12.75	26.57	1864-65	25.82
1865	1.87	2.40	1.30	.32	.05	.75	.35	.02	1.15	1.33	9.79	1.21	20.54	1865-66	35.50
1866	6.59	3.50	9.20	.02	1.72	.62	.50	.47	none	.08	2.51	11.75	36.96	1866-67	28.88
1867	9.12	2.02	.64	1.34	.44	.01	none	.26	.40	.88	1.75	9.68	26.54	1867-68	23.61
1868	3.06	1.56	3.70	1.14	.18	1.06	none	none	.06	.50	.77	2.80	14.77	1868-69	18.16
1869	5.76	1.13	1.32	3.61	1.52	.69	.13	none	1.00	.01	3.04	3.56	21.77	1869-70	20.00
1870	5.00	2.91	1.73	1.37	1.12	.13	none	none	.01	.02	1.00	3.50	16.79	1870-71	13.56
1871	1.86	2.47	1.62	2.27	.55	.26	.35	none	.37	.05	1.62	7.68	19.10	1871-72	23.21
1872	4.18	6.94	1.40	.54	.25	.03	.01	.01	.41	.16	2.67	3.38	19.78	1872-73	13.82
1873	1.33	3.00	1.05	1.50	.27	.03	.03	.05	.37	.94	1.71	4.49	14.77	1873-74	21.81
1874	6.38	1.80	3.65	1.55	.71	.13	.01	.09	none	1.55	4.33	.43	20.63	1874-75	12.72
1875	3.13	.17	1.79	.35	.75	.12	.38	.05	none	4.45	7.31	7.33	25.83	1875-76	31.13
1876	2.26	3.33	3.94	.71	1.19	.18	.34	1.00	1.02	3.75	.54	.01	18.27	1876-77	19.12
1877	1.71	4.23	3.10	1.23	1.48	.71	.12	.02	.01	.45	.67	1.62	15.35	1877-78	23.47
1878	9.72	6.53	3.74	.27	.20	.12	.01	.06	.36	2.81	2.15	1.14	27.12	1878-79	26.05
1879	3.25	3.54	8.39	2.66	1.40	.27	.38	.47	.11	.81	4.64	4.58	30.50	1879-80	33.31
1880	10.62	2.32	2.65	5.39	1.32	.02	.37	.07	none	.18	.32	6.76	30.02	1880-81	31.37
1881	13.95	6.53	.79	1.19	.17	1.04	.54	.04	.76	3.53	2.40	4.60	35.54	1881-82	28.08
1882	4.48	5.69	2.22	2.45	1.29	.08	2.49	none	1.44	2.86	2.72	3.75	29.47	1882-83	24.36
1883	2.58	1.51	1.11	3.25	2.65	none	.40	.63	.66	2.41	1.11	4.75	21.06	1883-84	26.41
1884	4.28	3.14	3.45	3.06	1.65	.87	1.62	.01	.60	1.04	.16	8.18	28.06	1884-85	22.49
1885	2.50	3.49	.11	1.98	1.40	1.40	1.16	.01	.83	.53	10.24	3.26	26.91	1885-86	30.92
1886	7.22	1.32	1.32	3.23	1.77	.03	2.13	.85	none	1.85	.78	6.67	27.17	1886-87	27.40
1887	5.18	4.96	1.07	2.63	.94	.36	.37	.18	.36	.09	1.75	5.88	23.77	1887-88	*14.81
1888	6.18														
Totals	142.03	84.16	70.50	49.68	27.47	12.75	13.66	5.75	11.74	34.72	89.85	139.07	652.44		674.41
Av'g's.	4.898	3.005	2.518	1.868	.981	.455	.487	.198	.405	1.197	3.098	4.998	24.150		23.372

* Up to February, 1888.

WEATHER SUMMARY FOR THE YEAR 1887, NEAR FORT JONES, SISKIYOU COUNTY.

Furnished by ISAAC TITCOMB, Observer.

MONTH.	Monthly Mean	Monthly Mean from 5 A. M. to 7 A. M.	Monthly Mean at 2 P. M.	Monthly Mean from 5 P. M. to 7 P. M.	Highest Temperature	Lowest Temperature	Rainfall and Melted Snow—Inches and Tenths
January	35.1	28.5	41.4	35.3	58	16	5.18
February	30.3	23.1	37.6	30.1	55	10	4.96
March	43.8	33.5	56.5	41.4	67	25	1.07
April	45.2	35.4	56.0	44.3	76	26	2.63
May	54.9	42.2	68.5	53.9	96	25	0.94
June	59.5	44.9	75.4	58.2	93	35	0.36
July	67.7	50.9	85.2	66.9	98	39	0.37
August	65.3	49.6	80.7	65.6	93	37	0.18
September	60.5	46.0	75.2	60.3	87	35	0.36
October	54.3	40.6	67.7	54.7	80	30	0.09
November	42.1	33.9	50.3	42.1	72	18	1.75
December	33.6	28.2	38.6	34.0	46	21	5.88
Yearly average	49.4	38.1	61.1	48.9	98	10	23.77

Snowfall in January was 25 inches; snowfall in February, 65 inches; snowfall in March, inappreciable; snowfall in April, 5 inches; snowfall in May, 2 inches. Snowfall for the season, 109 inches. Rainfall for the year ending July thirty-first, 25.75 inches.

Total rainfall and melted snow for season of 1887-88, up to February 1, 1888, 14.81 inches.

Average Precipitation in Siskiyou County.

	January	February	March	April	May	June	July	August	September	October	November	December
Berryvale	3.67	2.00	5.94	3.90	0.30	none	none	none	1.09	3.48	3.32	5.09
Fort Jones	2.88	4.10	2.77	1.25	1.21	0.69	0.06	0.07	0.14	1.16	2.99	4.99
Scott Valley	4.84	2.97	2.72	1.78	0.93	0.43	0.40	0.20	0.40	1.25	3.08	4.84
Yreka	4.38	2.16	1.82	1.53	1.02	0.89	0.77	0.30	0.27	1.15	1.61	2.77

CLIMATE AND RESOURCES OF THE FOOTHILL COUNTIES.

PLUMAS COUNTY.

It has less plain land than those counties lying to the south, but it has a great number of splendid valleys admirably adapted to grazing and agriculture. The mountains are ransacked for auriferous quartz, the woods yield lumber by the million feet, and the foothills are one everlasting orchard. Plumas County differs from the counties lying to the south of it in contour, the surface being more of a rolling character, thus placing a great deal of rich valley land at the disposal of the husbandman. There is virtually no limit to the fertility of the soil in those valleys, composed as it is of the alluvial deposits carried down by the melting snows and the rains of centuries from the overhanging Sierras. Along the foothills almost

every available foot of ground is utilized for fruit-growing purposes, and all kinds of fruits reach the highest perfection there. The lower ground is almost entirely devoted to grazing and agriculture, the only drawback to those industries being the lack of accommodation for conveying the products to market.

Quincy, the county seat, is a place of some 500 inhabitants. It has a weekly newspaper—the "Plumas National"—which receives good support from the people of the county, and a fine brick school house, with two departments, primary and grammar grade.

ELEVATED FARMING.

The altitude of American Valley is about 4,000 feet, yet all the cereals, alfalfa, etc., yield abundantly. The winters are long and somewhat severe, and the summers brief but delightful. From July to October the climate of Plumas—especially in the greater altitudes—cannot be surpassed for salubrity. The Plumas Meadows embrace a section that is greatly prized by the people of the valley as a summer resort, and large numbers go there each season to camp, hunt, and fish, and thus renew their health and energy.

GOLD YIELD.

In the earlier days of gold-seeking in California, Plumas was a prominent mining section, and even at the present time the annual gold output amounts to nearly or quite \$1,000,000.

NEVADA COUNTY.

A REGION FAMOUS FOR THE RICHEST GOLD MINES IN THE WORLD.—FRUIT PRODUCTION UNEXCELLED IN THE TEMPERATE ZONE.—DELICIOUS AND HEALTHFUL CLIMATE.

Nevada County is the chief of all the mining counties of the State of California. It has a middle situation in the State, but is generally ranked as a northern county. The summit of the Sierra Nevada runs through the county, the towns of Truckee and Boca being east of those mountains, and within Nevada County.

The chief industry is mining, although farming is carried on with profit in the western part of Nevada County. No equal area in the world has produced more gold than has Nevada County, and no region known has the promise of an equal mining permanency. The gold is found in both quartz ledges and gravel beds. Nevada and Grass Valley Townships are the principal portions in which quartz mining is carried on. Eureka and Washington Townships, further east and higher of altitude than the two first named, have also many valuable quartz ledges. The mines in Grass Valley and Nevada Townships have been systematically worked and developed for many years; those of Washington and Eureka Townships are now receiving the proper kind of attention. Some good quartz gold mines have been developed in Washington Township within the last two years. In Eureka Township, near Graniteville (Eureka South), several mines have paid well for a depth of from one hundred to two hundred feet, and then these mines were allowed to stop. Some of these properties are now being worked again. Meadow Lake has also many quartz ledges, which, in

former times, attracted so much attention that a city was built in almost a day, near the very summit of the Sierra Nevada. The Meadow Lake mines are idle now, and time alone will tell if the ledges there have gold sufficient to cause mines to be made. Rough and Ready Township has many gold-bearing quartz ledges in its eastern portion, while in the western part are valuable deposits of copper.

The great gold gravel region of the county is in the townships of Bridgeport, Bloomfield, Eureka, Little York, and Washington. These are of immense extent, and of incalculable richness. These beds were worked by the hydraulic process for the most part, and enormous values of gold were washed out of them. The hydraulic process of working mines is now under the ban of the law, but doubtless a way will be found for lawfully taking the gold from those rich gravel beds. There are some gravel mines in Nevada, Grass Valley, and Rough and Ready Townships, but they are not extensive—excepting at Mooney Flat, in Rough and Ready, where is the extension of the famous gravel leads of Timbuctoo, Smartsville, and Sucker Flat.

RAINFALL AT GRASS VALLEY, NEVADA COUNTY.

The rainfall that goes to make up the following table for Nevada County was taken at Grass Valley by Mr. Loutzenheiser, beginning with January, 1873, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1873	4.01	12.50	1.39	2.32	2.56	none	none	none	none	.83	2.99	19.01	45.61	1872-73	40.00
1874	13.71	6.93	11.71	3.76	1.05	.10	none	none	none	2.95	15.91	1.08	57.20	1873-74	60.09
1875	15.56	1.39	4.14	.29	1.18	2.28	none	none	none	.97	16.99	7.44	50.24	1874-75	44.78
1876	12.01	10.75	12.47	2.80	1.23	.65	none	none	.06	8.72	.62	none	49.31	1875-76	65.31
1877	10.18	2.44	4.79	1.14	1.40	.74	none	none	none	1.21	3.78	1.74	27.42	1876-77	30.09
1878	15.74	17.76	10.18	2.78	.59	none	none	none	.68	2.09	2.54	.75	53.11	1877-78	53.78
1879	10.72	11.51	18.07	7.08	3.08	.30	none	.08	none	2.79	6.54	8.86	69.03	1878-79	56.82
1880	6.40	4.83	4.07	23.31	6.23	.09	none	none	none	.94	.30	22.69	67.96	1879-80	63.20
1881	19.20	8.50	3.33	1.85	.05	1.50	none	none	1.25	3.71	3.52	8.21	51.12	1880-81	57.46
1882	6.03	6.30	7.96	5.27	1.18	.05	none	none	1.88	7.88	4.78	2.83	44.61	1881-82	43.93
1883	3.05	2.97	9.25	2.38	5.77	none	none	none	1.44	3.03	1.48	2.31	31.68	1882-83	40.79
1884	7.80	10.27	13.98	10.98	1.00	2.30	none	none	.98	3.30	.05	28.39	79.05	1883-84	54.59
1885	3.65	1.76	.83	3.17	.16	.90	none	none	2.65	none	19.27	6.36	38.75	1884-85	43.19
1886	12.40	1.43	4.83	11.38	1.09	none	none	none	none	1.66	.67	5.46	38.92	1885-86	59.41
1887	3.38	15.72	1.69	6.54	.64	.52	none	none	.26	none	1.38	6.85	36.98	1886-87	36.28
1888	11.81	2.59												1887-88	*22.89
Totals.	155.65	117.65	108.69	85.05	27.21	9.88	none	.08	9.20	39.18	80.82	121.98	740.99		749.72
Avg's	9.728	7.353	7.246	5.670	1.814	.659	none	.005	.613	2.612	5.388	8.132	40.399		49.981

* Up to March 1, 1888.

Average Precipitation in Nevada County.

	January	February	March	April	May	June	July	August	September	October	November	December
Boca	4.38	3.23	3.28	1.66	0.46	0.13	0.20	none	0.02	0.58	0.94	2.47
Bowman's Dam	14.44	12.25	11.81	7.46	2.62	0.75	0.20	0.02	0.64	3.98	7.24	11.91
Grass Valley	10.37	8.01	8.45	3.58	2.11	0.61	0.05	0.01	0.44	2.90	5.30	7.34
Nevada City	11.69	8.35	8.45	4.61	1.93	0.49	0.03	0.03	0.27	1.94	6.69	12.46
North Bloomfield	9.48	8.65	8.45	5.44	2.19	0.61	0.13	0.02	0.49	3.06	5.23	8.72
Truckee	6.43	6.14	4.81	2.85	1.08	0.41	0.16	0.03	0.05	1.43	2.12	4.01

PLACER COUNTY.

By E. W. MASLIN.

Placer County lies between latitudes $38^{\circ} 70'$, and $39^{\circ} 30'$. Its direction is northeast and southwest, and is about 100 miles long, by varying widths, from 10 to 30 miles, the course and distance being governed by the courses of the rivers which define its boundaries. It extends from about 8 miles from the Sacramento River to the summit of the Sierra Nevada Mountains. The southwestern one third lies in nearly a square, the northeast corner being near Auburn, the distance across the county, from the American to Bear River, being only about 8 miles. From the narrow portion the county gradually widens northeasterly to the State line. It contains 1,386 square miles. Its slope and altitude may be understood by following the line of the Central Pacific Railroad.

Twelve miles west of the town of Reno, in the State of Nevada, the Central Pacific Railroad enters the State of California, thence the road crosses southwesterly the county of Nevada, to the town of Truckee; thence it continues westerly along the dividing line between Placer and Nevada Counties until Cisco is reached, where the immigrant may fairly say he is in Placer County.

Summit Station is the highest point the railroad reaches, having an altitude of 7,017 feet. Near by is the famous Donner Lake—a small but beautiful sheet of water. About 14 miles distant is Lake Bigler, or, as it is popularly called, Lake Tahoe.

The upper and eastern part, from Dutch Flat to the eastern boundary, constitutes the lumbering section. Work may here be had for about eight months of the year, at milling, cutting cord-wood, shakes, posts, and shingles. The section, however, is fast developing other interests, and is destined to be famous for its superior apples and pears. Indeed, the district already enjoys an enviable reputation for these superior fruits. At Dutch Flat and Alta several tracts are now being planted to orchard.

AGRICULTURE.

The purely agricultural section of the county lies in the southwest portion of the county, and is traversed by the Oregon and California Division of the Central Pacific Railroad. It contains the towns of Roseville, Lincoln, and Sheridan. The soil is deep, alluvial, and productive. Grain is the principal product, though attention is paid to the breeding of high class live stock of all kinds. During 1887, much land has been planted to fruit.

FRUIT BELT.

On the spur of the mountain beginning at Rocklin and extending to Colfax, is the fruit belt of the county. The line of the railroad runs on the axis of the spur, and immediately upon it are found the towns of Rocklin, Pino or Loomis, Penryn, Newcastle, Clipper Gap, Applegate, and Colfax; situate from three to four miles apart.

THERMAL BELT.

A true thermal belt exists upon this spur. Damaging frosts in the history of fruit raising in Placer, are exceedingly rare, and are only felt at such seasons when frost prevails over all the State, and the damage is only suf-

ficient to lessen merely the yield of fruit and not to destroy it. Many times when there are killing frosts in other parts of the State, Placer has escaped. This was shown conclusively on the night of April 25, 1885, when there was a killing frost all over the State. On the spur described, the tenderest plants, such as tomatoes, potatoes, and beans, were untouched. A failure of the fruit crop has never been known in the county.

CLIMATE.

There are only two seasons in California, the wet and the dry. The rains begin about the middle of November, and fall at intervals until the middle of April. Work on the farm is begun as soon as the first rains cease, and continues on during the winter. Climate, of course, is modified by locations and aspects, but more by altitude; hence, in winter, a person can pick oranges at any of the towns from Rocklin to Auburn, and in a few hours' travel he may skate or enjoy a sleigh-ride at Dutch Flat or Cisco. The spur upon which the railroad is laid, as far east as Colfax, is blessed with an almost winterless climate. Only when it rains hard a workman wears a coat, and only when it rains is outdoor work interrupted. The immense watershed of the foothills permits no standing water to stagnate and cause malaria. The air, laden with balmy, piney odors, soothes the diseased lungs. The debilitated may find open air exercise nearly every day in the year, thus insuring long life to those thought destined to only a short existence. Asthmatics who have been benefited nowhere else, have found relief in the foothills of Placer, which are above the fogs and enjoy all the summer skies that excel those of famed Italy.

Average Precipitation in Placer County.

	January	February	March	April	May	June	July	August	September	October	November	December
Alta	9.08	7.76	7.74	3.77	1.48	0.47	none	none	0.36	2.25	4.81	5.98
Auburn	6.59	5.37	5.01	3.44	1.36	0.41	0.03	0.01	0.28	1.60	3.22	5.41
Cisco	11.66	10.56	9.98	5.78	2.74	0.89	0.13	none	0.32	2.52	4.21	8.66
Colfax	8.87	7.43	7.22	4.75	1.85	0.55	none	none	0.26	1.91	5.25	6.71
Emigrant Gap	10.63	9.98	10.09	5.41	2.72	0.69	0.02	none	0.34	2.59	2.71	6.55
Rocklin	4.23	3.07	2.72	1.91	0.78	0.25	0.02	0.01	0.12	0.82	1.84	3.35
Summit	8.71	9.36	7.74	5.89	1.83	0.60	0.09	0.01	0.23	2.56	3.12	7.81

EL DORADO COUNTY.

This county is bounded on the west by Sacramento County, in which is located the capital of the State; on the north by Placer County, which carried off the prize for greatest variety and best quality of fruit, at the citrus fair of 1886, held in Sacramento City; on the south by Amador County, which is second to none in California as a permanently prosperous mining county; on the east by the State of Nevada, in the principal cities of which—Virginia City, Gold Hill, and Carson—the farmers, dairymen, and stock raisers of El Dorado find a convenient and most profitable market, accessible by fine turnpike roads, for their grain, fruit, dairy products, and live stock, while the supply of the silver mines and the mills of the "Comstock Lode" with wood, timbers, and lumber, furnishes lucrative employment to a large number of men in the inexhaustible forests of El Dorado's higher altitudes.

The county has a length of about 75 miles from east to west, and a breadth of about 35 miles from north to south.

GEORGETOWN, EL DORADO COUNTY.

The rainfall at Georgetown, El Dorado County, was furnished by C. M. Fitzgerald, of the California Water and Mining Company, and extends from November, 1872, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season.
1872											4.30	18.72			
1873	4.08	13.05	3.05	3.11	.12	none	.03	none	none	.61	.55	16.60	41.20	1872-73	46.43
1874	16.66	8.03	13.87	5.80	1.32	.20	none	none	none	3.86	14.60	1.24	65.58	1873-74	63.67
1875	17.87	.04	5.07	.31	2.03	2.06	none	none	none	1.90	24.12	10.85	64.25	1874-75	46.31
1876	13.09	9.97	14.54	4.78	1.22	none	.77	none	none	11.47	.80	none	56.64	1875-76	81.24
1877	12.44	2.14	7.78	1.74	3.87	.24	none	none	none	1.03	4.30	1.97	35.51	1876-77	41.25
1878	16.21	22.78	10.92	2.99	.99	.12	none	none	.66	2.56	2.66	.48	60.37	1877-78	61.31
1879	11.24	12.41	17.57	9.65	3.39	.34	none	none	none	3.85	6.25	11.73	76.43	1878-79	60.96
1880	5.47	6.00	5.50	25.53	5.97	none	none	none	none	.18	.37	22.67	71.79	1879-80	70.40
1881	20.83	12.85	3.84	2.40	.40	2.28	none	none	2.02	4.23	3.30	10.32	62.47	1880-81	65.82
1882	8.59	5.88	10.44	7.11	2.06	.18	none	none	.16	7.75	7.00	3.31	52.48	1881-82	54.13
1883	4.70	3.08	8.73	3.87	7.34	none	none	none	1.60	4.10	1.94	3.50	38.86	1882-83	45.94
1884	7.53	13.80	19.94	15.07	1.52	3.65	none	.01	.80	3.54	.03	33.73	99.62	1883-84	72.65
1885	4.37	.82	.24	3.98	.19	2.28	.03	none	1.16	none	20.77	7.03	40.87	1884-85	49.99
1886	18.32	1.16	7.75	15.04	1.76	.06	none	none	none	3.43	1.79	6.90	56.21	1885-86	73.08
1887	3.36	15.79	2.40	6.54	.93	.18	none	none	.53	none	1.44	7.66	38.83	1886-87	42.12
1888	12.59													1887-88	*12.59
Totals	164.76	127.80	131.64	108.02	33.11	11.41	.83	.01	6.40	48.51	92.78	149.05	822.28		833.18
Avg's	11.090	8.520	8.776	7.201	2.299	.814	.059	.001	.457	3.465	6.185	9.937	58.734		59.515

* Up to February, 1888.

PLACERVILLE, EL DORADO COUNTY.

The rainfall record at Placerville, El Dorado County, from October, 1879, to date, was furnished by Samuel Hale, Superintendent of the El Dorado Water and Deep Gravel Mining Company. Records were also kept from February, 1874, to February, 1877. The total for those years was, for eleven months in 1874, 33.23 inches; 1875, 44.84 inches; 1876, 39.21 inches; January and February, 1877, gave 11.05 inches:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season.
1879										3.47	5.28	7.53		1879-80	52.60
1880	4.38	5.81	4.66	17.52	3.95	none	none	none	none	.35	.58	16.94	54.19	1880-81	48.04
1881	15.53	7.01	3.38	2.36	sprin.	1.89	sprin.	none	1.08	2.80	2.87	7.70	44.62	1881-82	42.46
1882	6.71	5.15	9.30	5.53	1.19	.13	sprin.	none	.93	5.72	4.94	1.98	41.58	1882-83	36.56
1883	3.74	2.58	6.88	3.54	6.25	none	sprin.	none	1.67	3.38	1.67	2.63	32.34	1883-84	57.36
1884	6.06	11.56	14.46	11.82	1.60	2.51	sprin.	.03	.85	2.47	.10	22.65	74.11	1884-85	36.56
1885	4.15	.97	.33	3.32	.27	1.42	none	none	.55	none	15.97	5.22	32.20	1885-86	54.63
1886	13.03	1.15	5.22	11.75	1.24	.50	sprin.	none	none	1.42	.91	5.02	40.24	1886-87	33.32
1887	3.18	14.18	2.09	5.71	.53	.28	none	none	.58	.06	1.42	8.34	36.37		
1888															
Totals	56.78	48.41	46.32	61.55	15.03	6.73	sprin.	.03	5.66	19.67	33.74	78.01	355.65		361.53
Avg's	7.098	6.051	5.790	7.694	1.879	.841	sprin.	.004	.708	2.186	3.749	8.668	44.456		45.191

Average Precipitation in El Dorado County.

	January	February	March	April	May	June	July	August	September	October	November	December
Georgetown	11.56	9.17	10.10	6.87	2.52	.75	.07	none	.37	3.46	5.81	8.45
Placerville	9.28	5.21	7.28	5.92	2.05	.71	.05	.01	.41	3.01	4.88	6.81
Shingle Springs	7.52	3.86	5.23	3.10	1.11	.19	.19	none	.23	.73	4.41	7.59

AMADOR COUNTY.

Amador is bounded on the north by El Dorado County: on the south, by Calaveras County: on the west, by Sacramento and San Joaquin Counties: and on the east by Alpine County. Jackson, its county seat, is about 50 miles each distant from Sacramento and Stockton, and all parts of the county enjoy a daily mail and passenger connection with San Francisco, as well as the two before mentioned cities, from which it will be seen that it is easy of access from the population centers of the State. The Amador Branch Railroad runs into the county, connecting with the Central Pacific road at Galt, and terminating at Ione City, within 12 miles distance from the other principal towns of the county. The San Joaquin and Sierra Nevada Narrow Gauge Railroad also comes to within 12 miles from Jackson, and runs along in Calaveras County within 3 to 6 miles of the county line. Latrobe, on the Sacramento and Placerville road, is distant from Plymouth, in this county, 12 miles. Thus, the bulk of the county, while not enjoying direct railroad communication, is not very far removed, and with one line actually in the county, and two others not very far off, it is reasonable to suppose that in no very long time a railroad will be extended into its heart, especially as the county is by no means at a standstill, but is constantly, though it may be slowly, increasing in population and wealth. Even as it is at present, nearly every important point in the county can be reached in ten hours from San Francisco.

The county is 70 miles long, and in its principal breadth 20 miles wide, though narrowing in the eastern portion to 4 or 5 miles. The area of the county is 362,000 acres, of which 90,000 acres are Government land.

From the works of every mine in this county can be seen in their season, the agricultural operations of plowing, seeding, and harvesting, and very few mineral claims exist some portion of whose surface is not given over to the husbandman. The whistle of the mine and the steam thrasher are both plainly heard in our "mining towns."

A fact that should not be overlooked by people who desire to settle in a region where an easy market is at hand, is the large number of people employed directly and indirectly about the mines, who, with their families, furnish a home market for nearly everything which is now raised in the county, and who are capable of absorbing much more, as our farming interest has not kept pace with the requirements engendered by a large and increasing non-producing class, who withal have money enough to pay for all they need, as wages are uniformly good. This home market could take several times the value of farm produce that it now does, and the lands, soil, and climate are here to raise it, if they be but put to proper use. The miner and farmer live together in harmony here, no conflict existing, as each recognizes his natural complement in the other. The farmer desires the success of the miner, that thereby he may be afforded a

ready and profitable market, and the county more rapidly built up; while the miner rejoices that the sight which greets his eye as he comes up from "the bowels of the earth" is a pleasing one, as it reveals to his eye the green grass, growing grain, and smiling orchard and vineyard.

Average Precipitation in Amador County.

	January	February	March	April	May	June	July	August	September	October	November	December
Tone	2.64	3.07	3.89	3.96	1.17	0.42	none	none	0.23	0.39	1.26	2.62
Jackson	5.25	5.85	5.59	5.30	1.56	0.33	none	none	0.23	1.88	2.06	3.76

SAN JOAQUIN VALLEY COUNTIES.

Showing the resources and climatic conditions of the following counties: San Joaquin, Calaveras, Tuolumne, Stanislaus, Mariposa, Merced, Fresno, Tulare, and Kern.

SAN JOAQUIN COUNTY.

The following table, compiled from observations taken by Ezra Fisk, three miles south of Lodi, shows the mean temperature of San Joaquin County at sunrise, at 2 P. M., and at sunset, for every month for five consecutive years, including 1882, 1883, 1884, 1885, and 1886. Very few localities on the coast possess so equable and moderate a climate as these figures indicate:

MONTH.	At Sunrise.	At 2 P. M.	At Sunset.	Mean.
1882—January	34.54	53.19	47.73	45.15
February	34.67	54.85	49.39	46.30
March	41.19	63.28	55.74	53.40
April	42.62	67.53	56.80	55.65
May	48.71	79.80	65.58	64.69
June	51.13	83.06	68.10	67.43
July	55.45	90.19	70.41	72.05
August	52.29	89.38	77.10	72.92
September	51.33	83.36	74.00	69.56
October	46.45	68.25	66.06	60.25
November	37.50	58.13	52.96	49.53
December	36.48	57.00	52.09	48.52
Yearly mean				58.78
1883—January	34.10	49.32	45.32	42.91
February	32.78	57.03	50.50	46.77
March	42.12	69.93	60.48	57.51
April	41.60	67.56	57.03	55.39
May	49.48	74.16	62.35	61.99
June	53.93	89.03	72.93	71.85
July	55.45	89.61	75.42	73.49
August	52.25	81.87	75.83	69.98
September	53.60	87.30	77.70	72.86
October	44.54	69.61	63.64	59.26
November	36.90	60.46	56.60	51.32
December	36.80	52.67	48.77	46.08
Yearly mean				59.11

MONTH.	At Sunrise.	At 2 P. M.	At Sunset.	Mean.
1884—January	35.80	55.09	49.93	46.94
February	37.99	55.43	51.13	48.18
March	43.83	61.77	55.12	53.73
April	45.66	67.10	58.16	56.97
May	50.64	76.71	63.93	63.76
June	54.00	76.83	64.63	65.15
July	52.93	86.19	73.48	70.86
August	54.73	87.96	75.93	72.87
September	48.30	78.96	69.86	65.70
October	45.35	75.83	65.61	62.26
November	39.63	67.63	61.10	56.08
December	38.64	56.16	51.74	48.84
Yearly mean				59.27
1885—January	40.54	54.00	49.35	47.96
February	40.57	64.75	57.39	54.23
March	43.32	73.45	62.77	59.84
April	47.50	74.26	61.93	61.23
May	48.86	81.25	66.32	65.44
June	49.53	81.26	65.93	65.57
July	54.77	86.29	72.35	71.13
August	56.38	90.93	78.67	75.32
September	52.93	86.60	77.03	72.18
October	48.32	78.61	70.90	65.94
November	48.10	62.00	57.80	55.30
December	43.64	55.09	51.06	49.94
Yearly mean				62.00
1886—January	40.80	53.06	49.10	47.65
February	43.28	63.35	56.21	54.28
March	39.48	62.96	54.45	53.29
April	46.23	67.90	58.01	57.38
May	47.80	78.61	64.19	63.53
June	53.56	87.00	71.90	70.82
July	56.29	89.64	76.74	74.22
August	56.35	90.83	77.41	74.86
September	50.40	85.40	74.60	70.13
October	42.80	71.90	64.19	59.63
November	35.70	62.30	56.76	51.58
December	40.80	59.06	53.38	51.08
Yearly mean				60.70

Average Precipitation in San Joaquin County.

	January	February	March	April	May	June	July	August	September	October	November	December
Ellis	2.63	1.56	1.12	0.61	0.20	0.05	none	none	0.01	0.27	0.90	2.09
Farmington	2.33	2.25	2.70	2.77	0.88	0.27	none	none	0.18	1.10	0.75	1.79
Lathrop	2.21	2.28	2.00	2.03	0.81	0.17	none	none	0.11	0.45	0.78	1.73
Stockton	2.82	2.64	2.09	1.50	0.63	0.18	0.01	none	0.05	0.49	1.37	3.12
Tracy	1.11	1.39	1.82	1.40	0.51	0.41	none	none	0.08	0.32	0.73	1.74

STANISLAUS COUNTY.

Stanislaus County forms a part of the great San Joaquin Valley. It is bounded on the north and northeast by Calaveras, Tuolumne, and Mariposa, on the south and southeast by Merced, on the southwest by Santa Clara and Contra Costa, and on the north and northwest by San Joaquin. Its eastern boundaries extend into the foothills of the snow-capped Sierras, and its western to the summit of the Coast Range near Mount Hamilton. Passing through its very heart, within sight of each other, wending their way to the great Pacific, are the San Joaquin, Tuolumne, and Stanislaus Rivers. The two former are navigable at certain seasons of the year. The county was organized in 1854, being formed out of a portion of Tuolumne County. It comprises an area of 1,350 square miles, or about 800,000 acres of land, three fourths of which are susceptible of cultivation. Within its boundaries is situated one of the most fertile valleys in the world, yielding productions varied in their character and marvelously vindicating the nature of her soil.

Wheat, barley, oats, rye, corn, and potatoes are the staple products. Cotton and hops are cultivated successfully in some parts, and the rich bottom lands along the rivers are well adapted to their cultivation. All kinds of fruits are successfully raised—oranges, lemons, limes, pomegranates, olives, peaches, apples, pears, almonds, walnuts, chestnuts, hickory nuts, peanuts, and grapes of the finest quality. From the latter is made some of the best brands of wine in the State.

The summer heat ranges between 80° and 110°, seldom reaching the latter extremity. The winters are mild and purely temperate, the thermometer varying from 30° to 70° and 80°, rarely going below 30°.

Average Precipitation in Stanislaus County.

	January	February	March	April	May	June	July	August	September	October	November	December
Grayson	2.21	1.77	1.62	1.22	0.44	0.17	none	none	0.01	0.47	1.22	2.70
Hills Ferry	1.17	2.11	2.45	1.47	1.04	0.41	none	none	0.19	0.32	0.56	1.97
La Grange	2.86	2.75	2.55	1.48	0.52	0.08	none	none	0.30	0.93	1.98	2.22
Modesto	1.84	1.31	1.27	1.03	0.40	0.13	0.01	none	0.11	0.42	1.25	1.63
Oakdale	1.51	0.53	3.41	1.56	0.25	0.05	none	none	none	0.30	0.73	1.10
Turlock	1.05	1.70	1.62	1.54	0.62	0.38	none	none	0.03	0.64	0.80	0.97

CALAVERAS COUNTY.

On the western slope of these mountains, nestled among its foothills and extending into the great valley, is the county of Calaveras. Its situation, midway between the north and south boundaries, makes it one of the most advantageous in the State. It is central, easy of access, and possesses an admirable variety of climate. In area, it comprises over one thousand square miles, being about equal in size to the State of Rhode Island, extending east and west in length a distance of about 60 miles, with an average width of about 30 miles.

EXTREMES OF TEMPERATURE.

Although the thermometer reaches as high as 112° in the mid-summer, the heat does not cause much discomfort, or produce disease, because of the lack of decaying vegetation and the extreme dryness of the atmosphere. The summer lasts from the latter part of May to the first of October, and during this season rain has been seldom known to fall. During the fall and winter, warm and abundant rains appear, in storms of a few days' duration, generally preceded by winds from the south.

Snow is seldom seen, except in December and January, in the extreme eastern portion, when it sometimes appears in a succession of fleecy hoods upon the highest peaks. Only four times in the past thirty years has snow covered the ground generally, and then it disappeared in the course of a few hours. Light frosts occur during December and January, but do no damage to vegetation, such delicate shrubs and plants as the oleander and geranium flourishing abundantly in gardens with no protection.

LUMBER SUPPLY.

The eastern climatic belt consists of a large timbered region, which, of itself, for grandeur, extent, diversity, and magnificent proportions, has no parallel in the entire timber belt of the world, and which, although yielding from 3,000,000 to 5,000,000 feet of lumber, and 2,000,000 shingles annually, is comparatively untouched. This entire belt, during the summer and early fall months, is occupied by the pastoral population, and those engaged in that pursuit living in other counties, also drive their flocks and herds to this great common. Being chiefly yet unsurveyed land, they are occupied for pastoral purposes by a kind of common agreement, each respecting the boundaries of his neighbor, and it is rare, indeed, that a disagreement occurs, except when crowded by strangers from the south, which in years of drought in that section of the State sometimes occurs.

TUOLUMNE COUNTY.

Tuolumne County is situated on the western slope of the Sierra Nevada Range of mountains, between the parallels of $37^{\circ} 40'$ and $38^{\circ} 20'$. A line drawn due east from San Francisco would cross the southernmost limit of that county, and is distant from that city 150 miles; means of conveyance, 3 miles by steamer, 119 by rail, and 28 by stage. Tuolumne, strictly speaking, is a mountain county.

The character of the soil may be understood to be hilly and mountainous on the whole, which renders a variety of scenery the picturesqueness of which opens up a broad field for admirers of the grand and sublime. The soil on the hillsides, mountain slopes, and the parallel chains of small valleys along the many watercourses throughout the county, is very productive; the valleys particularly produce a luxuriant growth of nutritious native grasses, and, together with the rich verdure of the gentle slopes and table lands, furnishes pasturage during the summer and fall months for 150,000 head of migratory stock—horned cattle, sheep, and horses—which are driven from the lower or valley counties. This advantage, with many equally as promising, and the salubriousness of the climate, renders every condition favorable to those who seek permanent homes in the interior. The temperature is quite equable, considering the geographical bearings of the county, never falling below 20° , excepting in the more elevated portions, or rising above 95° , unless in exceptional seasons.

MARIPOSA COUNTY.

Mariposa County is triangular in shape, with its north side bounded by Tuolumne; its south, by Fresno; and Merced lying at its western base. It is perhaps principally remarkable as containing the Yosemite Valley, but this fact, though it attracts a host of visitors and tourists, who all leave some money behind them, has little to do with the position of Mariposa as an important county of California. It has an area of 1,560 square miles, divided as follows: lower foothills, 530 square miles; higher foothills and Sierra mountains, 1,030 square miles.

The county reaches eastward from the edge of the San Joaquin plains across the foothills, far into the Sierra mountains, its altitude thus varying from about 300 to from 10,000 to 13,000 feet, that of Mount Dana being 13,227 feet. The largest stream of the county is the Merced River, which rises on the extreme east and flows westward to the plain.

On the south, Chowchilla River forms part of the boundary between this and Fresno County, while numerous smaller streams flow westward into Merced County. The eastern part is timbered with pine, spruce, and cedar, the central with oak and pine, while the western is sparsely timbered, and the extreme west is almost timberless.

The grape and fruit interests are at present insignificant, owing principally to distance from railroad communication, but the capabilities of production of Mariposa County are great. The diversified climate, varying all the way from semi-tropical near the edge of the plains, to temperate on the higher foothills, produces all kinds of fruits, from oranges and citrons, to apples and potatoes, in perfection, according to the situation. Mariposa apples are considered to be among the very best in the San Francisco market. Mariposa mountain potatoes always command one cent per pound more than any other potatoes, in the railroad towns. Grapes are an eminent success anywhere in the lower foothills. The climate, as before stated, ranges from semi-tropical to quite temperate, according to the altitude. But in salubrity, anywhere, it cannot be surpassed by any county in the State.

MERCED COUNTY.

The Merced River Valley, which at Hopeton is about 4 miles wide, is bordered on the south by a line of hills some 50 or 60 feet above it, which extend westward, gradually falling in elevation, nearly to the railroad at Cressy. The adobe lands mentioned, occupy the landward slope of these hills; and are found to be underlaid by a whitish, fissured clay-stone, sandy and ferruginous, easily cut, and used for building low walls. The lands of this river valley are a sandy loam, interspersed with underground gravel ridges, which in many places spoil the lands for farming purposes. The soil of Dry Creek is light and reddish, very deep, and yields 25 or 30 bushels of wheat per acre. The uplands north of Merced River are sandy and in part more gravelly than on the south, and will yield from 20 to 25 bushels of wheat per acre.

Merced County is essentially an agricultural county, and much of it is held in large tracts, and large farms are rather the rule than the exception, and gang plows, harvesters and reapers, and in fact all of the improved agricultural machines by which large tracts may be put in and the crops secured at the minimum cost, are in almost universal use.

The principal towns are Merced, the county seat, 140 miles from San Francisco; Plainsburg, Snelling, Hopeton, Merced Falls, Livingstone, Los Baños, and Central Point. The town of Merced is situated on the line of the Southern Pacific Railroad, and contains a population of between 3,000 and 4,000 people, and is steadily growing.

Average Precipitation in Merced County.

	January	February	March	April	May	June	July	August	September	October	November	December
Central Point-----	1.15	1.46	2.07	1.27	0.64	0.28	none	none	0.12	0.26	0.45	1.59
Merced-----	2.39	1.41	1.49	1.30	0.48	0.23	0.01	none	0.09	0.44	1.06	1.64

FRESNO COUNTY.

In order that all whose attention has been turned toward this great county may be as fully posted as possible, we quote from a letter written by the editor of the San Francisco "Argonaut."

"A hasty trip to Fresno has confirmed the writer's opinion, formed and expressed four years ago, concerning this part of our State. Every time we pass through the great valley of the San Joaquin we note the constant development of that region—new fences inclosing a larger breadth of land; an increased area of cultivation; new houses where there were none, better and larger houses where there were cabins; orchards and vineyards newly planted; ditches bringing water to new places; new colonies just planted, and older ones extending; hamlets, where a year ago there were but broad wheat fields; flourishing villages which we last recollect as hamlets; thrift, progress, prosperity—the population rapidly increasing—wealth, comfort, civilization growing on every side.

"As we write, our senses grow alive to the recollection of such miles of brilliant wild flowers; such hundreds of square miles of wheat fields; such gorgeous views of breezy plains, clothed with grass and grain, over which the sunlight played; such glimpses of bay and river and distant snow-clad mountain tops, fruit trees in their blossom, and alfalfa and alfalfa in their bloom, that we are quite certain that we have seen one of the most promising parts of our altogether prosperous State. The future progress of this valley, and the assurance that it will outstrip other localities in wealth and population, is because it has not been cursed with Spanish grants and grasping, land-hungry, greedy speculators, and because it is divided into small farms—colonies with twenty-acre and forty-acre holdings—upon every one of which is an industrious working family. The soil is owned by the man who tills it; they are nearly all Americans; and there is no other spot in California where the signs of future prosperity are more promising. We need not say *future* prosperity, for to-day the town of Fresno and its vicinity are more prosperous than any other place in California, and we attribute it largely to the fact of small farms and small farming. Four years ago, in company with Bernard Marks, we visited the Central Colony, planted by him. At that time we saw more than half a hundred families of ordinary size living upon twenty-acre farms—industrious, poor, working families, who had no other source of income than what came from the soil. We visited again the same homes, occupied by the same people: saw better

houses, larger fruit trees, older vines, more stock, and more evidences of comfort. We saw demonstrated the fact that an industrious family can live luxuriously off their own labor and the proceeds of 20 acres of irrigated land. We saw thousands of new homes in process of establishment upon 20, 40, and 100 acres. The splendid farms of Barton, Eisen, Eggers, and one or two others, belonging to incorporated companies, have an entire section of land (640 acres) but the rule is less than 100 acres. The evidences of prosperity and comfort are upon every side. The town, with now over 3,000 inhabitants, is growing rapidly, and rapidly increasing in population; not a house vacant, not a laborer unemployed, not a grumble of discontent heard from any quarter. It is the busiest and most cheerful community which we have encountered anywhere. The land is a marvel of fertility. Fruit and grapes are the principal productions for sale. It is almost a miracle, the rapid growing and quick bearing of fruit trees and vines. Water goes with the land—both are purchased together. The health of the locality is good. It is demonstrated that malarial fevers are not serious or lasting. A little care in this direction avoids any danger of malaria. The opportunity for poor people who are willing to work is greater than in any other section of the State."

FRESNO WEATHER SUMMARY FOR A PORTION OF 1887.

The station was opened on August 16, 1887. The data was compiled in the office of the officer in charge of the Pacific Coast Division Signal Service, by H. E. Wilkinson, Observer Signal Corps:

Table Showing, by Months, the Meteorological Conditions for the Year 1887, at Fresno, obtained from the Records of the United States Signal Service.

	August	September	October	November	December	Sums	Means
Mean monthly temperature.....	78.9	75.2	68.5	56.3	46.3	325.2	65.0
Maximum temperature.....	103.0	104.0	99.9	79.9	62.0	448.8	89.8
Minimum temperature.....	50.5	47.0	40.2	31.4	27.1	196.2	39.2
Number of days temperature was above 90°.....	13	18	6	0	0	37	7.4
Number of days temperature was below 32°.....	0	0	0	1	11	12	2.4
Mean monthly relative humidity.....	38.0	49.1	50.3	64.8	72.2	274.4	.....
Prevailing wind direction.....	N.W.	N.W.	N.W.	N.W.	N.	.....	N.W.
Highest velocity of wind.....	22	20	24	24	30	120	24
Number of clear days.....	16	28	27	23	14	108	21.6
Number of fair days.....	0	1	2	7	12	22	4.4
Number of cloudy days.....	0	1	2	0	5	8	1.6
Total number of days on which appreciable rain fell.....	0	2	1	3	6	12	2.4
Number of foggy days.....	0	0	0	0	0	0	0
Total rainfall.....	0.00	0.49	0.15	0.32	1.16	2.02	0.37

* Sixteen days. Station established and first observation taken August 16, 1887.

Average Precipitation in Fresno County.

	January	February	March	April	May	June	July	August	September	October	November	December
Big Dry Creek	3.62	3.07	3.08	.69	.22	.12	.04	none	.02	.67	1.47	3.28
Borden	1.42	1.61	1.38	1.21	.49	.17	.02	none	none	.40	.91	.98
Buchanan	2.60	3.12	3.00	4.33	.09	.14	none	none	.89	.65	1.26	3.46
Firebaugh	1.10	1.31	1.58	.98	.47	.47	none	none	.09	.39	.20	.19
Fort Miller	1.34	1.69	6.40	1.82	1.36	none	none	none	.05	.19	3.35	8.31
Fresno	1.21	2.02	2.96	1.93	1.11	.50	none	none	.20	.85	.53	.41
Hamptonville	1.71	3.18	2.29	3.42	.70	.10	none	none	none	1.42	1.25	2.42
Kingslaugh	1.50	1.58	1.50	1.54	.52	.16	none	none	.04	.35	.42	1.20
Centerville	2.42	3.00	2.97	2.77	.81	.31	none	none	.05	.84	.88	2.30
New Idria	2.59	3.21	7.03	1.78	1.47	1.05	.01	none	.13	.60	.55	1.02

TULARE COUNTY.

Tulare is well adapted to the growth of the cereals, and in the production of wheat it leads all other counties in the State. A considerable amount of land is also seeded to barley and Egyptian corn every year. Other grain crops are grown, but not to any great extent. It is difficult to make an estimate of the yield of grain in the county this year, but it will exceed 7,000,000 bushels. The acreage is much larger than any previous year, and is placed at 450,000 acres. All fruits common to semi-tropical and temperate latitudes grow in some portion of Tulare County, and many of them ripen earlier than in any other part of the State. For several successive years Tulare has had the first ripe fruit in the San Francisco market. A large amount of fruit is shipped from Visalia every year to Arizona, New Mexico, and to different parts of California, and in the near future a larger amount of dried and canned fruit will be exported from the county. The fruits that do best in the valley are stone fruits, such as the peach, nectarine, apricot, plum, prune, etc. Those requiring a cooler climate grow well in the mountains. In the lower foothill region is a large area of country in which the orange, lemon, and lime grow to perfection.

VISALIA, TULARE COUNTY.

The rainfall at Visalia, Tulare County, was taken from the United States Signal Service annual reports, and extends from July, 1877, to June 15, 1883, on which date the Signal Service station at that point was discontinued:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Total for Season
1877							none	none	none	none	.53	.83		1877-78	10.49
1878	3.25	3.98	1.13	.69	.08	none	none	none	none	.36	.10	.20	9.79	1878-79	3.95
1879	.70	.30	.53	1.23	.47	.06	none	none	none	.92	1.03	2.16	7.40	1879-80	12.81
1880	.98	3.14	.48	3.82	.28	none	spring	none	none	.13	.35	5.03	14.21	1880-81	11.70
1881	2.71	1.10	1.20	.86	.29	none	spring	.03	.09	.31	.52	.27	7.38	1881-82	6.73
1882	.87	1.86	1.47	.95	.37	.02	none	none	.21	1.31	.83	.15	8.04	1882-83	8.17
1883	.04	.54	2.48	1.79	.82										
Totals	8.55	10.92	7.29	9.34	2.31	.08	spring	.03	.30	3.03	3.36	8.64	46.82		53.85
Averages	1.425	1.820	1.215	1.557	.385	.013	spring	.005	.050	.505	.560	1.440	7.803		8.975

Average Precipitation in Tulare County.

	January	February	March	April	May	June	July	August	September	October	November	December
Goshen	0.99	1.55	1.14	1.14	0.20	0.12	none	none	0.09	0.35	0.30	1.03
Kingsburgh Railroad Bridge	1.79	3.10	3.85	2.54	0.89	0.40	none	none	0.08	0.62	0.64	0.30
Lemoore	1.63	1.30	1.32	1.15	0.20	0.28	none	none	0.03	0.34	0.39	1.26
Tulare	1.49	1.38	1.03	1.04	0.30	0.13	0.01	none	0.04	0.24	0.39	0.81
Truby's Ranch	1.42	2.45	1.21	2.12	1.16	0.15	none	none	0.04	0.39	0.60	1.43
Visalia	1.43	1.82	1.21	1.56	0.38	0.01	none	0.01	0.05	0.51	0.56	1.44

KERN COUNTY.

Kern is one of the largest counties in the State, and includes within its boundaries the extreme upper (southern) end of the San Joaquin Valley, as well as parts of the Sierra Mountains and Mojave Desert on the south-east and south, and of the Coast Range of mountains on the southwest. The two mountain chains unite on the south, and thus form a high border of from 2,000 to 4,000 feet above the valley on all sides except the north, their spurs often extending far into the plains. The county is bounded on the north by Tulare, on the east by San Bernardino, south by Los Angeles, southwest and west by San Luis Obispo. It has an area of 8,160 square miles, divided as follows: San Joaquin Valley, 2,590 square miles; (tules 290 miles); lower foothills, 560 square miles; higher foothills and mountains, 1,955 square miles; desert lands, 2,180 square miles; Coast Range mountains, 885 square miles.

Average Precipitation in Kern County.

	January	February	March	April	May	June	July	August	September	October	November	December
Caliente	1.59	2.30	1.70	2.12	.96	.23	none	none	.03	.58	.48	1.29
Delano	.86	1.31	1.01	1.10	.76	.02	none	none	.01	.20	.56	.59
Fort Tejon	1.29	1.69	1.72	2.37	.96	.18	none	.12	1.31	.87	1.02	3.96
Keene	1.91	3.67	2.20	2.22	.69	.27	none	none	.08	.48	.51	1.75
McClung Ranch	1.02	.94	.66	1.05	.20	.02	none	none	.01	.28	.36	1.49
Mojave	.62	1.03	.41	.22	none	.13	none	none	.04	.01	.24	1.11
Sumner	.97	.98	.68	.88	.40	.10	none	none	none	.12	.47	.47
Tehachapi	1.53	3.39	1.74	1.52	.45	.18	none	none	.04	.40	.31	1.60

TABLE SHOWING THE AVERAGE TEMPERATURE AND RAIN-FALL FOR THE SAN JOAQUIN VALLEY COUNTIES.

The following named counties are represented in this table: San Joaquin, Merced, Fresno, Tulare, and Kern. The lowest temperature below 20° was recorded in the following named counties: Fresno, Tulare, and Kern. The lowest being for each county named above, as follows: 15°, 10°, 16°, respectively. Taking elevation in consideration, the southern end of the San Joaquin Valley is much colder than any portion of the Sacramento Valley. For instance, Auburn, in Placer County, Sacramento Valley, at an elevation of 1,363 feet, has a minimum record of but 18°, while Delano, only 319 feet, has a minimum record of 16°, or two (2) below Auburn. This table will convince the wayfarer, though a stranger, that he must

come north to the Sacramento Valley to find a more equable climate, unless he decides to cross into Santa Barbara or Los Angeles Counties and winter there; even then the great Sacramento Valley will compare favorably with those counties in a great many respects. The mean annual temperature of Los Angeles and Santa Barbara are the same as Sacramento, but the average winter temperature of the two former places are much milder than that of Sacramento City.

STATIONS AND COUNTIES.	Elevation—Feet	Average Winter Temperature	Average Spring Temperature	Average Summer Temperature	Average Autumn Temperature	Average Annual Temperature	Highest Tempera- ture	Lowest Tempera- ture	Average Seasonal Rainfall—Inches.
<i>San Joaquin County:</i>									
Stockton	20	48.1	59.7	72.3	61.7	60.5	110	20	13.54
Lathrop	25	46.3	59.4	72.1	60.6	59.6	106	20	11.98
Tracy or Ellis	76	48.8	62.3	77.6	61.6	63.3	112	20	9.10
Farmington	111	46.2	60.2	75.6	62.6	61.2	114	20	15.57
<i>Merced County:</i>									
Merced	171	49.2	61.2	78.4	64.5	63.3	112	20	11.09
<i>Fresno County:</i>									
Borden	274	48.4	61.5	82.2	67.1	64.8	118	15	9.27
Fresno	295	50.2	64.9	84.1	67.6	66.7	115	18	9.57
Kingsburgh	301	49.0	62.5	82.6	66.2	65.1	112	10	9.36
<i>Tulare County:</i>									
Goshen	286	49.1	63.6	82.1	67.5	65.6	116	14	7.76
Tulare	289	46.6	62.8	83.4	65.1	64.5	116	14	6.89
Visalia	335	45.4	59.4	80.8	60.3	61.5	109	18	9.39
Tuohy's Ranch, Lewis Val- ley	440	47.1	62.5	79.4	62.3	62.8	106	22	11.15
Lemoore	227	46.1	62.0	81.3	63.8	63.3	111	18	9.82
<i>Kern County:</i>									
Delano	319	50.4	64.7	83.8	68.0	66.7	118	16	6.34
Sumner	422	49.6	65.0	85.1	65.5	66.3	113	18	5.02
Caliente	1,290	51.8	63.0	82.8	66.3	66.0	112	23	10.98
Keene	2,705	44.6	55.0	73.6	59.4	58.2	108	9	13.28
Tehachapi	3,964	39.1	51.8	72.6	54.8	54.6	102	zero.	11.04
Mojave	2,751	47.4	59.6	82.1	66.2	63.8	114	12	4.94

COAST AND ADJOINING COUNTIES.

The resources, climatic conditions, etc., of the following counties: Humboldt, Mendocino, Lake, Sonoma, Napa, Marin, Contra Costa, Alameda, San Mateo, Santa Cruz, Santa Clara (Lick Observatory), San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, and San Diego.

DEL NORTE COUNTY.

This county occupies the extreme northwest corner of the State. It embraces 66,562 acres of land, of which about two thirds is mountainous and one third valley land. The population, as near as can be estimated, is 2,800. Crescent City, the county seat, is 280 miles from San Francisco, and the only means of travel from the metropolis is by steamers and sailing vessels, or by a circuitous route over a mountainous road.

The farms in the valleys have nearly all been turned into dairies, the

owners finding that interest much more profitable than raising grain. There have been shipped over the wharf at Crescent City this season, 384,710 pounds of butter. The butter made in this county is a very superior article, commanding the highest market price. The shipment this year was less than previous years, on account of dry weather making the pasturage poor.

Average Precipitation in Del Norte County.

	January	February	March	April	May	June	July	August	September	October	November	December
Camp Lincoln	16.87	6.68	11.20	7.16	.92	2.17	.25	.03	.30	1.82	9.48	15.58
Crescent City	16.54	9.91	7.53	10.39	3.38	.96	.26	.02	2.06	10.98	4.95	14.13
Fort Terwah	7.81	10.52	5.00	6.07	3.63	.62	1.94	.47	3.05	7.43	8.67	13.01

HUMBOLDT COUNTY.

For general small farming, dairying, stock raising, and lumbering, it is not excelled by any county in the State. Its inexhaustible river-bottom lands produce enormous crops of all the cereals and fruits common to the temperate zone, while its natural prairies in Mattole Valley, on Bear River Ridge, and the Bald Hills abound in rich pasture for cattle and sheep.

The average rainfall is 32 inches; the mean temperature of January, 40°; of July, 58°. Droughts and failure of crops are unknown. Pastures remain green by the influence of heavy fogs, long after the winter rains have ceased and the southern counties are scorched brown.

This county is exceedingly rich in its vast forests of redwood, with its rivers, the Mattole, Bear, Eel, Elk, Mare, Redwood, Trinity, and Klamath, abounding in salmon and smaller fish. These streams are of but little utility for navigation. Eel River is navigable only a few miles from its mouth, by small ocean steamers to Port Kenyon, on Salt River. Frequent shoals render them all useless even for small crafts, the major part of the year.

The principal productions of the county are oats, potatoes, peas, butter, and wool. The climatic conditions seem peculiarly adapted to oats, they forming the surest and most profitable crop. Yields of one hundred bushels and over to the acre are not at all uncommon on bottom land near the coast. Peas require a rich, heavy soil, and here they find the conditions to insure a good crop. Barley yields enormous crops; the grain is plump, and the weight above the average. It is not sold for export, as prices seldom warrant it. Butter is one of the leading articles of production. The length of the dairy season, the low temperature of the summers, the abundance of pasture, are all conducive to butter making. Wool stands next to lumber in value of export.

The climate is equitable and genial, with sufficient fog near the coast to prolong the green pasture; further inland, among the mountains, fogs are infrequent, the air is lighter, and the temperature higher in summer and lower in winter. Apples, pears, plums, and cherries grow to remarkable size and perfection throughout the valleys a few miles from the coast. Peaches and melons of good flavor are raised at Camp Grant, about 50 miles from the sea. All small fruits and berries do well anywhere in the county.

EUREKA, HUMBOLDT COUNTY.

Prepared in the office of the officer of the Branch Signal Service, at San Francisco, by H. E. Wilkinson, Observer Signal Corps:

Table Showing, by Months, the Meteorological Conditions of the Year 1887, at Eureka, obtained from the Records of the United States Signal Service.

MONTHS.	Mean Monthly Temperature	Maximum Temperature	Minimum Temperature	Number of Days Above 30°	Number of Days Temperature was Below 32°	Mean Monthly Relative Humidity	Prevailing Wind Direction	Wind—Highest Velocity	Number of Clear Days	Number of Fair Days	Number of Cloudy Days	Total Number of Days upon which Rain Fell	Number of Foggy Days	Total Rainfall
January	47.0	59.1	27.0	0	4	89.0	N.	24	5	14	12	19	0	8.86
February	41.4	62.1	26.8	0	9	85.4	S.	22	5	6	17	19	0	9.07
March	49.3	64.0	34.5	0	0	83.9	N.W.	24	4	14	13	11	0	2.28
April	48.5	64.5	36.3	0	0	86.8	N.W.	40	4	15	11	13	0	5.55
May	51.9	75.0	35.0	0	0	84.7	N.	29	4	12	15	9	0	3.51
June	52.7	63.7	39.7	0	0	86.8	N.W.	28	9	14	7	3	0	1.92
July	52.5	60.0	43.0	0	0	90.4	N.W.	29	6	22	3	1	2	0.06
August	54.5	62.0	47.5	0	0	87.4	N.W.	25	6	19	6	1	0	0.04
September	53.4	68.0	41.5	0	0	89.1	N.W.	42	13	14	3	1	2	0.21
October	52.3	72.0	40.0	0	0	88.8	N.	30	15	15	1	3	3	0.51
November	50.6	67.3	33.8	0	0	88.4	S.E.	no rec.	5	14	11	7	0	2.66
December	47.5	60.0	35.2	0	0	89.9	S.E.	no rec.	2	11	18	18	0	5.41
Sums	601.6	775.7	443.3	0	13	1,050.6	N.W.	293	78	170	117	105	7	40.08
Means	50.1	64.6	36.7	0	1.1	87.6		29.3	6.5	14.2	9.8	8.9	0.6	3.34

Average Precipitation in Humboldt County.

	January	February	March	April	May	June	July	August	September	October	November	December
Fort Gaston	10.63	8.10	8.24	4.75	1.52	.68	.10	.12	.86	2.87	7.70	10.36
Fort Humboldt	5.37	4.41	5.79	2.33	.91	.54	.25	.03	.44	1.51	4.57	7.42
Humboldt	6.26	4.84	5.11	3.08	1.11	.33	.04	.05	.55	2.67	3.80	4.57
Hydesville	4.43	4.30	7.03	6.28	.50	.63	.05	.02	2.40	1.60	1.68	5.14

TRINITY COUNTY.

This county properly belongs to the class whose trade is directly tributary to the Sacramento Valley. It adjoins Humboldt on the west, but draws its supplies chiefly through the railroad system that penetrates Shasta on the east. Its area in square miles is 2,625, and its acreage is 1,680,000.

RAINFALL AT WEAVERVILLE, TRINITY COUNTY.

The opening of the northern portion of the State to settlement, as evidenced by the extension of the California and Oregon Railroad, and the inquiries concerning lands in that region for various uses, renders the amount of annual rainfall of that division of the State a subject of interest and value to the prospector. We therefore give below, by months and seasons, the amount of rainfall and melted snow which has been precipitated at Weaverville, Trinity County, from July 1, 1871, to December 23, 1883, as reported by George E. Noonan:

MONTHS.	1871-2.	1872-3.	1873-4.	1874-5.	1875-6.	1876-7.	1877-8.	1878-9.	1879-80	1880-1.	1881-2.	1882-3.	1883-4.
July						.47	.02	.02	.38		.44	.08	
August		.25					.21	.03	.36			1.38	5.00
September	.29	.35	1.80			.67		1.28	.03		.94		
October	.40	.78		1.57	2.82	7.38	1.83	1.80	2.08	.55	3.77	8.36	.88
November	11.50	3.78	4.35	10.30	15.39	1.56	8.72	3.58	7.95		2.18	.78	2.45
December	3.12	6.32	9.22	1.32	8.94	.29	3.25	1.41	11.14	14.73	6.60	4.30	1.50
January	17.62	2.51	10.39	3.59	3.69	5.51	19.83	2.02	3.14	17.41	4.59	4.46	4.53
February	15.09	4.29	4.41	.46	7.42	6.24	16.20	6.48	1.09	10.81	4.40		
March	3.11	2.78	3.12	2.14	8.23	4.52	8.53	12.84	1.22	.95	1.12	3.24	
April	2.43		3.58	.19	2.79	2.26	2.11	4.05	8.28	3.13	2.44	5.00	
May	.84		2.67	1.22	1.63	1.62		4.02	1.46	1.15	1.29	3.72	
June	.17		.70	.93	.15	1.72		.68	.23	.99	1.16		
Total rain	54.57	21.06	40.24	21.72	51.13	32.24	60.70	38.21	37.00	49.72	28.93	31.32	9.83
Snow	2.40	4.00	9.47	3.00	11.00	.76	3.25	3.50	13.56	2.50	7.50	2.25	4.53
Waterfall	56.97	25.06	49.71	24.72	62.13	33.00	63.95	41.71	50.56	52.22	36.43	33.57	14.36

Weaverville is at an altitude of a little over 2,000 feet.

MENDOCINO COUNTY.

Mendocino County is bounded on the north by Humboldt, Trinity, and Tehama Counties; on the east by Tehama, Colusa, and Lake Counties; on the south by Lake and Sonoma Counties, and on the west by the Pacific Ocean, and contains 3,816 square miles.

Mendocino County is a mountainous coast county, its prominent topographical feature being two chains of Coast Range Mountains, running nearly parallel, and separated by the valleys of Eel and Russian Rivers.

The lands of the county suitable for cultivation have been estimated to cover about 900,000 acres, and lie chiefly in the valleys adjoining the two rivers and their larger tributaries. About 200,000 acres more are good grazing lands, while the rest of the county area is rugged and mountainous. The chief resource of the county is, of course, its great lumber trade, some twenty-four sawmills being engaged in converting its immense redwood forests into lumber and shingles for the San Francisco market.

Average Precipitation in Mendocino County.

	January	February	March	April	May	June	July	August	September	October	November	December
Camp Wright	10.38	6.50	5.22	1.95	.70	.20	.01	.02	.40	1.20	6.53	11.41
Mendocino	10.30	8.40	8.10	4.24	1.34	.40	.06	.03	.50	2.73	6.47	7.42
Point Arena	6.46	5.92	5.26	2.97	.80	.25	.01	.01	.28	1.98	2.83	3.71
Ukiah	7.07	5.96	5.31	3.67	1.07	.12	none	.02	.65	2.98	2.15	4.69

LAKE COUNTY.

According to the Immigration Association of California, the Government still owns in Lake County, mostly of this hill and mountain land, 440,000 acres, and says of these lands generally: In Lake, Mendocino, and Humboldt Counties, the Government lands are generally mountainous, with narrow valleys and plateaux, covered with valuable timber of pine, oak, cedar, laurel, etc., with considerable undergrowth. There are many open places, either level or sloping enough to be plowed, and where nutritious grasses grow during the rainy season. Nearly every section is well watered by pure, cold springs or running streams.

FRUITS.

All the ordinary fruits do well. Apples, pears, plums, apricots, peaches, and prunes mature finely and are of excellent flavor. Oranges are successfully raised. All the small fruits grow well, and there is no county where the soil and climate suit the growth of strawberries better.

CLIMATE.

But the great charm of this county is its pleasant and healthful climate. The winters are never severely cold, and the summers never oppressively warm. From November to April much rain usually falls, and ice occasionally forms in some places, but during this period we have days and weeks at a time when the sun shines brightly and the weather is perfectly delightful. Flowers usually bloom all winter, which is sufficient evidence of mildness. From May until November, the weather is always fine. But little rain falls, and though the summer days are warm, they are not very sultry. A gentle breeze nearly always springs up in the afternoon, and though the evenings are sufficiently pleasant for even invalids to sit out of doors until bedtime, the nights are usually cool enough to make a light blanket or quilt comfortable as a bed covering. Fogs rarely ever visit this county, and harsh sea breezes are absolutely unknown here.

Average Precipitation in Lake County.

	January	February	March	April	May	June	July	August	September	October	November	December
Kono Tayee.....	5.13	3.78	4.17	1.04	.50	.48	none	.01	.17	1.07	3.35	2.26
Middletown.....	7.66	4.48	6.23	7.87	1.35	.72	none	none	.80	1.35	3.02	8.67

SONOMA COUNTY.

Sonoma has four principal valleys: Sonoma Valley, from which the county takes its name, Petaluma, Santa Rosa, and Russian River Valleys. The last three may be said to form one great valley, through which the San Francisco and North Pacific Railroad runs, from its terminus on tide-water, for sixty miles, without a cut more than ten feet deep on the entire line.

The four great valleys which we have just mentioned are the chief topographical features of Sonoma County. The southern section of the coast

country, lying just north of Marin County, is celebrated for its dairy products. The hills are rolling, destitute entirely of trees or brush, and covered with a rich sward of grass, kept green most of the year by its proximity to the ocean. This dairy section extends nearly to Russian River; along that river, and north of it to the county line, the county is densely timbered.

The climate of the county of Sonoma differs in many respects from that of other portions of the State; the average rainfall being about one quarter more than at San Francisco, fifty miles south. It will be as an agricultural and viticultural county that Sonoma will achieve fame and prosperity in the future.

Average Precipitation in Sonoma County.

	January	February	March	April	May	June	July	August	September	October	November	December
Healdsburg	5.52	9.31	none	none	none	0.12	none	none	0.04	0.10	2.57	15.22
Petaluma	5.88	4.11	2.99	1.30	0.62	0.42	0.01	none	0.11	1.23	2.25	3.93

NAPA COUNTY.

Napa, one of the loveliest counties of California, is bounded on the north by Lake, on the west by Sonoma, and on the east and southeast by Yolo and Solano. The southern extremity, a mere tip of land, touches the bay of San Pablo and just saves Napa from being classed among the inland counties. Napa is almost entirely hedged in by various spurs of the Coast Range, the southeastern portion only—that adjoining Solano—being open. Besides these there are ranges which divide the county into as many fruitful valleys.

The population of the county in 1880 was 12,264, and has increased about one third since, being about 16,500 now.

There were 23,550 acres sown to wheat, producing 275,000 centals; 2,993 acres to barley, producing 41,000 centals; 1,888 acres to oats, producing 29,000 centals; 1,031 acres planted to corn, producing 18,500 centals; and 6,578 acres sown for hay, producing 11,000 tons.

Of the vines in the county 1,557 acres are one year old; 2,485 acres two years old; 3,100 acres three years old; 2,338 acres four years old; and 4,710 acres five years old and upward.

Average Precipitation in Napa County.

	January	February	March	April	May	June	July	August	September	October	November	December
Napa	5.88	3.87	3.61	2.98	0.98	0.27	0.01	none	0.62	1.64	1.47	2.84
Knoxville	4.06	8.09	11.72	6.19	0.16	none	none	none	none	1.92	0.85	1.54
Calistoga	7.32	5.02	4.99	2.98	0.90	0.39	none	none	0.29	2.22	2.85	4.41

MARIN COUNTY.

Marin County is a peninsula bounded on the north by the line of Sonoma County, on the east by the bays of San Francisco and San Pablo, and on the west by the Pacific Ocean. The extreme southern extremity faces the Golden Gate, beyond which the city of San Francisco is distant about three miles. Its geographical advantages can be appreciated at a glance. Situated on the highway, over which the commerce of the great undeveloped North must pass and find a terminus, it must one day be the center of great business interests. Its immediate proximity to the metropolis of the Pacific Coast, also coupled with the attractions of climate and scenery, have already both given it extensive introduction to settlers and made it a favorite place for suburban residence. Its area, in round numbers, is about 350,000 acres, or a little less than 600 square miles.

Marin County has two distinct climates, that may be classified, in general terms, as the ocean coast climate and the inland climate. They differ from each other to an extent that can hardly be realized when it is known that these great atmospheric variations are only separated by a shallow mountain range not more than two or three miles across.

Average Precipitation in Marin County.

	January	February	March	April	May	June	July	August	September	October	November	December
Point Benito.....	4.96	4.59	3.83	2.76	1.05	.48	.04	none	.31	1.61	2.76	3.04
Point Reyes.....	3.38	3.15	2.62	2.04	.65	.28	none	none	.04	.54	2.09	2.77
San Rafael.....	9.77	6.29	6.05	3.77	1.34	.47	none	none	.39	2.59	4.50	4.39

SAN MATEO COUNTY.

The climate of this county is quite as varied and diversified as the surface. It has been truly said that in California one may find every variety of climate, from frigid to torrid, from Sahara dryness to perpetual humidity. This assertion is well illustrated in San Mateo County, except that the extremes are not so great as above expressed. The thermal condition of the atmosphere has a remarkable equability throughout the year, but there is much difference of climate in the different localities. In the northern portion it bears some resemblance to that of the adjoining county of San Francisco, fogs and cold winds prevailing to a considerable extent during the six months from April to October. From the neighborhood of Mt. San Bruno it grows milder, and the severity of the winds is rapidly diminished until, south of Belmont, they become mild and refreshing breezes, just sufficient to prevent the interior heat known over a large area of California, rendering the climate healthy, bracing, and delightful. On the ocean coast the thermometer ranges slightly lower than on the bay coast, but the climate is rather more equable, owing to oceanic influences, and the fogs which prevail in summer. Here again, the climate is very healthy, as much so as on the eastern side of the mountains, while the fogs render agriculture a more certain and reliable pursuit than along the bay, because of the consequent moisture of the atmosphere. The mountain climate differs again from that of both sections mentioned. In the summer, dense fogs at times drench the summit in moisture nearly equal to a rain, and snow falls at intervals during most winters, but seldom remain-

ing upon the ground more than a few hours. Yet the climate is not unpleasant, and as healthy as anywhere in the county. There is found a belt of territory along the sides of the mountains and midway up, that is milder than above or below, where frosts in winter, and extreme heat in summer, are more rare than at less or greater elevation, a fact that few persons have observed, and which is likely to be taken into consideration in the future by those selecting locations for country homes.

Average Precipitation in San Mateo County.

	January	February	March	April	May	June	July	August	September	October	November	December
Año Nuevo Island	4.00	3.96	4.05	2.62	0.89	0.36	0.03	none	0.23	1.23	2.72	2.40
Crystal Springs	7.77	6.54	7.14	4.07	1.36	0.51	0.03	none	0.29	1.95	3.19	5.29
Mendo Park	3.33	2.85	2.79	2.26	0.63	0.04	none	none	0.03	0.58	0.92	2.57
Pigeon Park	3.59	3.81	2.79	1.76	1.08	0.06	0.01	none	0.09	0.83	1.71	2.43
Pilarcitos	11.02	8.77	7.86	4.03	1.79	0.49	0.03	none	0.31	2.01	6.09	12.35
Point Montara	4.62	3.96	4.07	2.42	0.95	0.40	0.01	none	0.29	1.23	2.59	2.19
St. Andreas Reservoir	9.06	8.15	6.73	3.81	1.31	0.37	0.01	none	0.28	1.88	4.11	10.34
San Mateo	4.20	2.87	3.05	1.84	0.57	0.30	none	0.05	0.10	0.99	1.85	2.77
Woodside	4.68	7.36	10.90	6.17	0.20	3.29	none	none	0.45	1.71	0.31	1.40

CONTRA COSTA COUNTY.

As in most counties of our State, so here, one may find a diversity of climate. Generally speaking, it may be regarded as a happy medium between the chilling fogs of San Francisco and the enervating heat of the interior valleys. The afternoon westerly trade winds, blowing fresh from the ocean, are tempered by the warmer inland air currents, rendering the climate delightful, subject neither to the extremes of heat or cold. In summer the mercury ranges from 70° to 90°; in winter from 40° to 50°, with a few exceptional warmer or colder days.

The farming lands in the eastern section of the county extend from Bay Point, a spur of Diablo, east, and between the foothills and San Joaquin River to the county line, being 23 miles in length by from 3 to 6 in width, and embracing about 60,000 acres of arable land. In this tract are the well known Los Medanos and Los Meganos Spanish grants. This land is a rich, alluvial soil, and produces large crops of wheat and barley. To the northward, and between the upland and San Joaquin River, are some 50,000 acres of tule land. This land is marvelously productive, the soil is practically inexhaustible, and when made secure from the effects of floods and freshets, by substantial levees, will become the most valuable farming section in the county.

Average Precipitation in Contra Costa County.

	January	February	March	April	May	June	July	August	September	October	November	December
Antioch	1.63	1.61	2.30	1.53	.58	.20	none	none	.05	.49	.92	.82
Brentwood	1.99	1.44	2.01	1.84	.43	.30	none	none	.01	.35	.81	1.91
Byron	2.21	1.62	2.47	2.09	.51	.31	none	none	none	.43	.94	2.33
East Brother Island	1.86	1.19	0.91	.59	.31	.05	none	none	.05	.31	1.47	.80
Martinez	3.61	2.90	3.45	2.45	.61	.30	none	none	.10	.55	1.05	2.46
Mount Diablo	5.02	2.39	.58	.22	.26	.21	none	none	.03	1.81	5.04	1.14

SANTA CRUZ COUNTY.

Santa Cruz is one of the most mountainous counties on the southern coast: the ranges, however, being neither high nor much broken. The eastern boundary line rests upon the summit of the Santa Cruz branch of the Coast Range at an elevation of 2,000 feet or more above the sea, extending south to the Pajaro River, while to the west, and separated by the San Lorenzo Valley, is another mountain range reaching southward to the bay of Monterey at Santa Cruz. Still westward to the coast the country is hilly and broken, often to the water's edge. In the southern part of the county the Pajaro River forms the boundary line, and is bordered by a valley region extending east and west, and embracing rich dark loam and adobe lands, which are well adapted to wheat and barley. Northwestward from this there is another valley region lying east of the town of Santa Cruz, and at the mouth of the San Lorenzo River. It embraces several terraces or benches, which are from a mile to two miles wide, and extend through the valley, the first 30 feet above the level of high water, the second 34 feet high, and the third 199 feet higher still—showing a total rise of 263 feet. The town of Santa Cruz is located upon the lowest of these benches, extending southward by Soquel and Aptos to the Salinas marshes. It has been estimated that the bottom lands of the county embrace 40,000, and the terrace plateaus 50,000 acres.

Average Precipitation in Santa Cruz County.

	January	February	March	April	May	June	July	August	September	October	November	December
Santa Cruz.....	5.12	4.64	4.07	3.25	0.81	0.51	none	none	0.42	1.37	1.40	4.22

SAN BENITO COUNTY.

San Benito is a long and narrow county. Its northeast and southwest boundary lines lie respectively on the summit of two branches of the Coast Range (viz.: the Gabilan and inner Coast Range), whence the surface slopes abruptly to the valley of the San Benito River, which flows northwestward through the middle of the county and unites with the Pajaro River. A few small streams of little importance are tributary to the San Benito.

The average of tilled lands for the county at large is 91.5 acres per square mile; but, as already stated, the entire acreage is confined almost exclusively to the northern part of San Benito Valley, where the average is much higher.

Average Precipitation in San Benito County.

	January	February	March	April	May	June	July	August	September	October	November	December
Hollister.....	2.62	1.96	1.93	1.20	0.40	0.22	none	none	0.08	0.65	1.30	1.42

MONTEREY COUNTY.

Monterey County is one of the largest counties in California, having an area of 3,600 square miles, or over 2,225,000 acres of land. The boundaries of the county are as follows: On the north, by Santa Cruz County and Monterey Bay; on the east, by the counties of San Benito, Fresno, and Tulare; on the south, by San Luis Obispo County; and on the west, by the Pacific Ocean.

The topographical features of the county are rough mountains and broad plains, gently rounded hills and small valleys. Three principal mountain ranges pass through it from northwest to southeast: the Santa Lucia, running parallel with the coast line; the Hills, or Sierra de las Salinas, at the foot of which the Salinas River flows; and the Gabilan Range, commencing in the county on the east. Besides these, there are spurs which cramp most of the valleys into comparative insignificance. The region embraced in the hills is but poorly supplied with water, but where irrigation has been practiced, a semi-tropical luxuriance of growth is the result.

The table lands produce rye, oats, wheat, barley, and flax, the average yield of wheat being about 30 bushels, and of barley, about 50 bushels per acre. The upland which lies close to the base of the mountains, produces wheat, barley, oats, and rye, and here also are located some of the finest dairies in the State. Wheat and barley are the staple productions of the Salinas Valley, but besides these, most of the other cereals as well as vegetables and many of the semi-tropical fruits are produced.

The Pajaro Valley is located in the northwestern part of the county, and extends across the Pajaro River into Santa Cruz County. The soil productions and climate are similar to those of the Salinas, from which valley it is separated by a low range of hills.

Stock and sheep raising are prominent interests in Monterey County, especially in the mountainous portions and the upper Salinas Valley, where thousands of cattle, horses, hogs, Angora goats, and tens of thousands of sheep are raised.

TEMPERATURE OF MONTEREY.

The following carefully prepared table presents the temperature of Monterey, from meteorological observations, taken at the Hotel del Monte, from January, 1882, to December, 1885:

MONTHS.	MONTHLY TEMPERATURE.			Rain-fall.	MONTHS.	MONTHLY TEMPERATURE.			Rain-fall.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
1882.					1883.				
January	57.00	38.66	46.75	1.50	January	70.00	27.00	48.27	2.60
February	58.66	41.66	51.52	2.52	February	82.00	29.00	50.80	2.22
March	60.66	49.66	54.29	5.64	March	84.00	43.00	56.04	5.68
April	63.33	52.66	57.78	1.57	April	68.00	46.00	56.83	1.42
May	66.00	55.33	60.51	-----	May	87.00	50.00	59.99	1.32
June	67.00	60.00	63.24	-----	June	87.00	56.00	63.26	.10
July	68.00	62.66	65.38	-----	July	84.00	55.00	63.03	-----
August	69.33	60.66	63.82	-----	August	75.00	50.00	61.09	-----
September	73.00	60.00	63.26	.22	September	85.00	48.00	62.99	.19
October	64.33	52.66	58.64	1.67	October	73.00	37.00	55.98	.71
November	61.00	46.00	52.58	1.02	November	71.00	32.00	51.38	.39
December	58.33	46.66	53.13	.86	December	73.00	33.00	50.81	1.16
1884.					1885.				
January	64.00	31.00	49.51	2.60	January	65.00	35.00	49.90	1.22
February	74.00	28.00	50.60	5.34	February	68.00	35.00	52.46	.09
March	70.00	40.00	54.51	6.08	March	81.00	41.00	55.95	.40
April	71.00	45.00	56.95	3.75	April	76.00	43.00	58.43	1.70
May	78.00	50.00	59.68	.36	May	77.00	52.00	59.35	.20
June	69.00	56.00	61.13	1.80	June	69.00	52.00	59.40	.03
July	76.00	53.00	61.01	-----	July	75.00	54.00	62.50	-----
August	77.00	50.00	61.11	.07	August	76.00	53.00	60.31	-----
September	77.00	44.00	57.52	.03	September	72.00	44.00	59.10	-----
October	77.00	40.00	54.39	1.87	October	72.00	41.00	58.13	-----
November	71.00	40.00	52.23	.30	November	74.00	38.00	56.52	6.65
December	68.00	30.00	52.01	5.33	December	73.00	35.00	54.29	1.73

HIGHEST AND LOWEST TEMPERATURES AT SALINAS, MONTEREY COUNTY.

The following table of maximum and minimum temperatures for each month, at Salinas, was furnished by E. K. Abbott, M.D., and covers a period from May, 1872, to date:

DATE.	JAN.	FEB.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPT.	OCT.	NOV.	DEC.
	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...	Lowest Temperature...
1872	75	30	36	43	47	54	56	52	47	36	32	22
1873	66	31	70	70	84	90	71	79	80	87	82	80
1874	66	32	33	33	45	50	53	52	46	30	35	66
1875	66	71	32	80	77	78	77	76	48	46	84	73
1876	62	30	32	79	48	49	52	51	50	39	70	68
1877	77	30	73	64	44	40	51	52	51	42	81	76
1878	67	25	37	44	47	52	54	54	50	35	34	69
1879	64	28	74	72	48	48	54	79	87	45	78	31
1880	64	29	80	44	45	52	52	71	50	42	30	26
1881	70	25	65	64	41	46	52	87	50	90	75	20
1882	68	36	78	76	45	49	86	70	50	86	83	38
1883	65	28	32	45	45	52	52	52	44	31	29	72
1884	66	24	32	42	44	49	53	53	50	40	75	33
1885	65	30	84	68	45	54	74	78	50	38	30	28
1886	70	25	72	44	50	52	54	76	45	84	80	26
1887	68	32	82	41	50	73	54	54	75	37	72	74
1888	68	38	35	38	49	51	54	76	46	69	80	32
1889	70	28	82	40	44	50	72	78	57	39	31	78
1890	63	22	33	70	70	78	72	70	78	92	78	66
Highest and lowest temperatures in fifteen and sixteen years												
	20	81	84	82	90	94	86	87	96	92	84	80
	20	24	32	33	44	40	43	51	44	30	28	20

RAINFALL AT SALINAS, MONTEREY COUNTY.

The rainfall of Salinas, Monterey County, was furnished by Dr. E. K. Abbott, and extends from July, 1872, to date, showing the rainfall by months, years, and seasons; also the averages:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year.	Season of	Inches
1872				none	none	none	none	none	.01	.02	.02	6.80		1872-73	13.45
1873	3.40	2.40	.80	none	none	none	none	none	.10	.10	.20	4.25	11.25	1873-74	11.17
1874	3.42	none	2.15	.95	none	none	none	none	none	1.83	1.42	none	9.77	1874-75	8.59
1875	4.50	.15	.69	none	none	none	none	none	none	none	5.17	2.18	12.69	1875-76	21.59
1876	6.16	3.55	4.52	none	.01	none	.01	none	.05	1.04	.05	none	15.48	1876-77	4.74
1877	2.54	.16	.30	.10	.40	none	none	none	none	.12	1.00	2.39	7.01	1877-78	23.82
1878	7.05	8.77	2.57	1.92	none	none	none	none	.05	.60	.29	.35	21.51	1878-79	10.94
1879	2.42	2.81	1.85	1.69	.82	.15	none	none	none	1.05	1.08	2.28	14.15	1879-80	13.22
1880	1.65	1.16	1.64	3.90	.46	none	none	none	none	none	.57	5.56	14.94	1880-81	14.07
1881	3.32	2.32	1.26	.66	none	.38	none	none	.10	.28	.67	1.24	10.23	1881-82	12.93
1882	1.78	2.31	4.86	1.01	.49	.19	none	none	.38	1.43	.65	1.95	15.05	1882-83	11.79
1883	.91	.95	2.26	1.28	1.98	none	none	none	.19	1.19	.25	.90	9.91	1883-84	20.25
1884	1.71	4.49	5.09	3.05	.72	2.66	none	.18	.11	1.79	.28	4.46	24.54	1884-85	9.48
1885	1.09	.05	.19	1.21	.12	none	done	none	.92	.08	6.60	1.30	10.66	1885-86	20.76
1886	5.10	1.47	2.16	3.83	.20	none	none	none	none	.62	.82	.72	14.92	1886-87	9.88
1887	.75	4.73	.54	1.63	.07	none	none	none	.71	none	.38	2.16	11.57	1887-88	*8.00
1888	4.15														
Totals	49.95	35.32	30.88	21.23	5.27	3.38	.10	.18	1.72	10.15	19.96	36.54	203.68		206.68
Ar'gs	3.122	2.355	2.059	1.415	.351	.225	.006	.011	.108	.634	1.248	2.284	13.579		13.779

* Up to February 1, 1888.

Average Precipitation in Monterey County.

	January	February	March	April	May	June	July	August	September	October	November	December
Chualar	1.56	2.36	3.87	1.29	0.82	0.59	none	none	0.11	8.88	0.46	0.74
Monterey	2.45	2.28	3.45	1.78	0.61	0.31	0.06	none	0.05	0.59	1.06	2.51
Pajaro	4.41	3.11	3.01	1.61	0.54	0.24	none	none	0.11	0.99	1.68	2.50
Salinas	3.24	2.42	2.33	1.21	0.41	0.28	0.01	0.01	0.07	0.64	0.94	2.33
Soledad	2.25	1.69	1.78	0.70	0.30	0.15	none	none	0.02	0.16	0.57	1.09

SAN LUIS OBISPO COUNTY.

This county has a coast line of about 60 miles, and extends from 50 to 60 miles to the eastward. The Santa Lucia Range of mountains trending northwest and southeast divide the county into two unequal sections of distinct characteristics; the coast region comprising about one third of the area, with a climate cooler in summer and warmer in winter than on the opposite side of the range. Four fifths of all the soil of the county is of a fertile character and arable, excepting upon precipitous hillsides. The chief settlements are on the coast side, the eastern portion being a vast waste or cattle range, mostly owned in large tracts.

To those in pursuit of rural pleasure, to the tourist, and above all, to the invalid in quest of health, the mineral springs of San Luis Obispo County offer advantages exceeding those of any other places of natural resort in the State. Newsome's White Sulphur Springs is situated about fourteen

miles south of San Luis, near the village and stream Arroyo Grande. The Paso Robles Hot Springs are situated in a pleasant oak grove thirty miles east of San Luis Obispo.

Average Precipitation in San Luis Obispo County.

	January	February	March	April	May	June	July	August	September	October	November	December
San Luis Obispo.....	4.78	4.20	2.96	2.01	0.37	0.15	none	none	0.03	0.67	1.31	4.27

VENTURA COUNTY.

The surface of the country is much broken, the mountains in the southeastern part rising to the height of 5,000 and 6,000 feet. The principal rivers are the Santa Clara, which rises in Los Angeles and runs through a broad and fertile valley in Ventura; the Buenaventura, which rises in the San Rafael Mountains and flows through the county seat, the Sespe, Mupa, and San Antonio Creeks. The Sierra de San Fernando stretches across the Los Angeles boundary of Ventura with the Santa Susana Mountains, still more completely shutting off the county of the angels. These mountains are not like some California mountains, however—bare, brown peaks—but are covered with excellent feeding grass, on which thousands of sheep and cattle are sustained.

The climate is the finest to be found anywhere on the face of the globe. Sixty-five miles of seacoast form one boundary of this county, embracing two good roadsteads; yet the inland country is remarkably free from the sweeping gales and chilling winds so common in most of the coast counties. The exemption in favor of Ventura County can be accounted for only upon the hypothesis that the force and rawness of the winds are, to a great extent, broken and tempered by the interposing islands, which lie but a few miles seaward and parallel with the shore.

Ventura County comprises an area of 1,296,000 acres of admirably diversified soil. It is the best watered and timbered county in Southern California.

The county is rapidly gaining in population and wealth, and the area of cultivated land is gradually extending. Only 32,128 centals of wheat were exported in 1880, as against 93,406 centals in 1884. The wheat crop of 1886 is not yet reported. There were exported of barley in 1880, 240,816 centals, and in 1884, 293,066 centals. Corn grows well in this county, and the yield is frequently enormous.

LOS ANGELES COUNTY.

Los Angeles Valley is the most productive probably in the State, and is destined at no distant day to teem with a dense population. This valley is over 50 miles long and about 20 wide, so that it contains 1,000 square miles, or 640,000 acres. Of this land 160,000 may be classed as grazing, 160,000 grape and tropical fruit land, and 320,000 acres superior corn land, equally adapted for barley, rye, oats, millet, potatoes, hops, etc. It is estimated that at least 500,000 acres of land can be irrigated. It lies most favorably for purposes of irrigation, being a level plain with a fall of 10 feet per mile in a southerly direction. Many very large ditches are already constructed in this valley, leading the water from the rivers, and many are being dug at the present time. The supply of artesian water in this valley is also the most prolific yet discovered in the State, flowing wells being obtained over an immense area, at depths ranging from 40 to 200 feet. The soil, as a rule, is a rich, sandy loam, easily worked and very productive. For richness of soil, variety of productions, favorable climate, location, and, in many respects, this is by far the richest county in Southern California, especially in the production of semi-tropical fruits. It is not extravagant to say there are over 2,000,000 orange trees in orchard form in this county.

LOS ANGELES WEATHER SUMMARY FOR 1887.

The following tabulated matter was compiled in the office of the officer in charge of the Pacific Coast Division Signal Service, by H. E. Wilkinson, Observer Signal Corps:

Table Showing, by Months, the Meteorological Conditions for the Year 1887, at Los Angeles, California, obtained from the Records of the United States Signal Service.

MONTHS.	Mean Monthly Temperature	Maximum Temperature	Minimum Temperature	Number of Days Temperature was Above 90°	Number of Days Temperature was Below 32°	Mean Monthly Relative Humidity	Wind—Prevailing Direction	Wind—Highest Velocity	Number Clear Days	Number Fair Days	Number of Cloudy Days	Total Number Days on which Appreciable Rain Fell	Number Foggy Days	Total Rainfall
January	55.4	79.6	33.1	0	0	66.3	N.E.	24	21	10	0	2	0	0.12
February	51.6	81.5	35.4	0	0	81.5	S.E.	32	13	9	6	13	0	9.25
March	59.1	85.0	41.1	0	0	78.5	W.	18	18	12	1	2	0	0.23
April	59.1	87.0	40.3	0	0	78.9	W.	37	11	10	9	5	0	2.36
May	63.1	92.0	44.5	2	0	72.9	W.	30	14	11	5	3	0	0.20
June	66.1	100.0	46.7	2	0	78.5	W.	20	17	10	3	1	0	0.07
July	69.5	98.1	51.1	3	0	82.7	W.	20	13	13	5	2	0	0.07
August	68.5	93.6	52.1	3	0	80.9	W.	18	11	20	0	0	0	T.
September	68.2	91.0	49.2	2	0	82.0	W.	23	15	12	3	1	0	0.18
October	68.5	93.2	47.2	5	0	72.7	W.	34	24	6	1	1	0	0.17
November	60.0	86.0	38.8	0	0	78.1	W.	18	18	9	3	3	0	0.80
December	53.7	73.2	35.2	0	0	74.3	N.E.	37	21	7	3	4	0	2.68
Sums	742.8	1060.2	514.7	17	0	927.3		311	196	129	39	37	0	16.19
Means	61.9	88.4	42.9	1.4	0	77.3	W.	25.9	16.3	10.8	3.2	3.1	0	1.39

RAINFALL AT LOS ANGELES, LOS ANGELES COUNTY.

The following figures, from February, 1872, to June, 1877, are from the records of Mr. C. Duycommun, of Los Angeles; from July, 1877, to date, from Signal Office records:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Inches
1872		2.25	.43	.97	.10	none	none	.22	none	none	none	4.42	*8.39	1872-73	13.96
1873	2.08	7.19	.05	none	none	none	none	1.06	none	none	.74	5.74	16.86	1873-74	24.78
1874	5.51	9.77	1.09	.45	.42	none	none	none	.06	1.81	1.89	.20	21.20	1874-75	21.67
1875	17.22	.15	.22	.07	.05	none	none	none	none	none	7.57	.82	26.10	1875-76	26.74
1876	6.54	7.92	3.41	.45	.03	none	none	none	none	.40	none	none	18.75	1876-77	5.28
1877	3.48	.01	.83	.26	.30	none	none	none	none	.86	.45	3.93	10.12	1877-78	21.26
1878	3.33	7.68	2.57	1.71	.66	.07	none	none	none	.14	none	4.70	20.86	1878-79	11.35
1879	3.59	.97	.49	1.19	.24	.03	none	none	none	.93	3.44	6.53	17.41	1879-80	20.34
1880	1.33	1.56	1.45	5.06	.04	none	spring.	spring.	none	.14	.67	8.40	18.65	1880-81	13.13
1881	1.43	.36	1.66	.46	.01	none	none	spring.	spring.	.82	.27	.52	5.53	1881-82	10.40
1882	1.01	2.66	2.66	1.83	.63	spring.	none	none	spring.	.05	1.82	.08	10.74	1882-83	12.11
1883	1.62	3.47	2.87	.15	2.02	.03	spring.	none	none	1.42	none	2.56	14.14	1883-84	38.22
1884	3.15	13.37	12.36	3.58	.39	1.39	.02	.02	spring.	.39	1.07	4.65	40.39	1884-85	9.29
1885	1.05	.01	.01	2.01	.06	spring.	spring.	spring.	.05	.30	5.55	1.65	10.69	1885-86	22.72
1886	7.80	1.41	2.52	3.32	.01	.11	.27	.21	.11	.02	1.18	.26	17.22	1886-87	14.42
1887	.20	9.25	.29	2.36	.20	.07	.07	spring.	.18	.17	.80	2.68	16.07	1887-88	43.90
Totals	59.34	68.03	32.91	23.87	5.16	1.70	.36	1.51	.40	7.45	25.45	47.14	264.73	-----	265.67
Avg's	3.956	4.252	2.057	1.492	.322	.106	.022	.094	.025	.466	1.591	2.946	17.649	-----	17.771

* Total for eleven months.

† Up to February 1, 1888.

Average Precipitation in Los Angeles County.

	January	February	March	April	May	June	July	August	September	October	November	December
Alosta	3.02	8.64	6.99	2.81	1.12	.63	none	none	none	1.36	.86	2.45
Anaheim	1.77	2.99	2.10	2.06	.77	.18	none	none	none	.41	.78	2.01
Drum Barracks	2.38	1.17	2.08	.35	.02	none	.04	.17	none	.84	2.62	
Los Angeles	4.40	3.94	2.08	1.22	.43	.11	none	.10	none	.44	1.40	3.35
Newhall	2.16	3.25	2.71	1.50	.65	.21	none	none	none	.27	.62	2.84
Ravenna	1.37	2.81	2.48	.98	.10	.38	none	none	.05	.36	.47	2.26
San Fernando	2.18	3.65	2.88	1.80	.52	.28	none	none	none	.35	.63	2.52
Santa Monica	1.05	1.75	.70	2.72	none	none	none	none	none	.05	1.44	2.51
Spadra	3.05	2.59	2.01	1.04	.36	.08	none	none	.01	.50	1.10	1.76

SAN DIEGO COUNTY.

San Diego was the last of the counties of Southern California to abandon stock raising as its leading interest. The immigration of 1868, 1869, 1870, and 1871, was drawn hither by the railroad inducements of that period, and was mainly to the town; the interior was settled slowly. Many of the old residents were skeptical regarding the adaptability of the soil and climate to fruit culture. Yet there were some, even in the earlier days, who believed that nature intended these lands for something better than cattle and sheep pastures. Time has fully justified their belief. While San Diego County began late, she has advanced rapidly. There are to-day in this county, according to the latest statistics: Grapevines, 244,896; apple trees, 22,725; peach, 25,520; pear, 19,125; plum, 3,258; cherry, 917;

nectarine, 880; fig, 69,194; quince, 2,860; apricot, 86,295; orange, 96,240; lemon, 57,100; olive, 46,000; prune, 1,120; almond, 10,800; walnut, 21,385—making a grand total of 728,311. Twelve years ago the total was less than 2,500.

HIGHEST AND LOWEST TEMPERATURES AT POWAY, SAN DIEGO COUNTY.

Highest and lowest monthly temperatures at Poway, San Diego County, from 1879 to date, furnished by Mr. Adams Chapin, Volunteer Signal Service Observer:

MONTHS.	1879.		1880.		1881.		1882.		1883.		1884.		1885.		1886.		1887.	
	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature	Highest Temperature	Lowest Temperature
January	79	25	78	26	73	32	75	27	86	28	76	31	71	30	77	28	79	27
February	85	29	67	29	85	35	77	33	82	28	82	33	81	32	83	42	74	31
March	78	36	73	32	87	39	80	38	80	45	71	40	87	37	73	40	83	42
April	86	42	79	43	92	53	80	42	86	45	74	43	88	46	78	45	83	45
May	98	49	93	47	90	55	80	50	93	49	79	52	80	52	90	54	87	48
June	110	55	86	53	89	56	84	54	97	58	101	56	90	55	95	60	93	56
July	88	57	86	54	97	56	89	58	93	62	101	59	97	60	101	59	97	60
August	98	54	93	52	97	58	93	60	94	61	104	59	103	63	98	64	96	58
September	100	51	91	51	101	54	96	47	102	56	90	53	103	57	99	58	93	57
October	97	38	88	42	82	42	89	41	81	42	87	41	97	41	83	40	92	48
November	84	30	85	32	84	31	85	34	82	36	87	33	82	38	83	28	85	32
December	77	28	84	34	82	21	88	32	80	35	78	30	85	35				

RAINFALL AT POWAY, SAN DIEGO COUNTY.

The rainfall at Poway, San Diego County, was furnished by Adams Chapin, voluntary observer United States Signal Service, and covers a period from November, 1878, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year.	For Season of	Total for Season
1878												1.57			
1879	2.88	1.50	none	1.20	.08	.20	none	none	none	.30	2.75	4.72	13.73	1879-80	15.39
1880	1.13	1.54	1.76	3.10	.09	none	.06	.16	none	.74	.30	3.56	12.44	1880-81	10.61
1881	1.16	.60	2.86	1.14	.03	none	none	.04	.03	1.17	.20	.73	7.96	1881-82	13.42
1882	6.40	2.69	1.13	.90	.04	.69	none	.01	.04	.29	.60	.27	12.46	1882-83	8.48
1883	.94	1.76	1.87	1.36	1.34	none	none	none	none	1.59	none	2.40	11.26	1883-84	20.45
1884	1.59	9.40	6.96	4.81	2.26	none	none	none	none	.24	.38	5.91	31.99	1884-85	10.69
1885	.72	.35	.34	2.05	.63	.07	none	none	none	.06	2.71	.90	7.83	1885-86	18.67
1886	6.34	2.64	3.24	2.78	none	none	spkl	.02	none	.10	1.50	.20	16.82	1886-87	9.47
1887	.09	4.87	.34	2.01	.34	none	none	spkl	.63	none	2.04	2.70	13.02	1887-88	*9.37
1888	4.01														
Totals	25.26	25.35	17.50	19.46	4.81	.80	.06	.23	.70	4.49	10.50	22.96	127.51		116.18
Averages	2.526	2.706	1.944	2.151	.534	.089	.007	.078	.078	.499	1.050	2.296	14.168		14.522

* Up to February 1, 1888.

RAINFALL AT SAN DIEGO, SAN DIEGO COUNTY.

This table runs from November 1, 1871, to date. The figures are from the annual reports of the Chief Signal Officer. They show the rainfall by calendar years and seasonal years: also, the totals and averages by months:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year.	Season of	Inches.
1871											1.19	1.39			
1872	.99	1.63	.46	.26	.12	none	none	.18	none	none	none	1.41	5.05	1871-72	6.04
1873	.34	4.15	.11	.10	.01	none	none	1.95	none	none	.77	5.46	12.89	1872-73	6.30
1874	3.11	3.73	1.20	.35	.32	none	.12	none	.04	.53	.88	.55	10.83	1873-74	16.89
1875	2.38	.37	.45	.12	.20	.02	none	.21	.39	none	2.25	.41	6.80	1874-75	5.66
1876	2.47	2.44	1.78	.06	.05	.05	.03	.06	.03	.08	.04	.15	7.24	1875-76	10.11
1877	1.05	.23	1.44	.26	.43	none	none	none	none	.81	.06	3.89	8.17	1876-77	3.80
1878	1.45	4.83	1.41	2.91	.58	.16	none	none	none	.96	none	1.57	13.87	1877-78	16.10
1879	3.54	1.04	.10	.60	sprin.	.07	none	none	none	.29	2.77	6.30	14.71	1878-79	7.88
1880	.61	1.50	1.43	1.34	.06	.06	.09	.32	none	.53	.28	4.15	10.37	1879-80	14.36
1881	.52	.45	1.88	1.35	.04	.05	none	.01	.04	.24	.12	.30	5.00	1880-81	9.66
1882	4.53	2.55	1.02	.45	.18	.07	none	none	.01	.41	.39	.13	9.74	1881-82	9.51
1883	1.09	.95	.41	.31	1.14	.08	none	none	none	2.01	.20	1.82	8.01	1882-83	4.92
1884	1.34	9.05	6.23	2.84	2.17	.31	none	none	.07	none	.11	4.83	26.95	1883-84	25.97
1885	.35	.02	.78	1.20	.61	.06	sprin.	.13	sprin.	.31	1.56	.70	5.72	1884-85	8.03
1886	7.00	1.50	3.73	1.95	.04	.07	sprin.	sprin.	none	.05	.95	.10	15.39	1885-86	16.99
1887	.04	4.51	.02	2.14	.47	.04	.01	sprin.	sprin.	sprin.	2.08	1.14	10.72	1886-87	8.32
1888														1887-88	
Totals	30.81	38.95	22.45	16.24	6.42	1.04	.25	2.86	.58	6.22	13.65	34.30	171.46		172.41
Averages	1.926	2.434	1.403	1.015	.401	.065	.016	.179	.036	.389	.803	2.018	10.716		10.776

SAN DIEGO WEATHER SUMMARY FOR 1887.

The following table was compiled in the office of the officer in charge of the Pacific Coast Division Signal Service, by H. E. Wilkinson, Observer Signal Corps:

Table Showing, by Months, the Meteorological Conditions for the Year 1887, at San Diego, obtained from the Records of the United States Signal Service.

MONTHS.	Mean Monthly Temperature	Maximum Temperature	Minimum Temperature	Number of Days Temperature was Above 90°	Number of Days Temperature was Below 50°	Mean Relative Humidity	Prevailing Wind Direction	Wind—Highest Velocity	Number of Clear Days	Number of Fair Days	Number of Cloudy Days	Total Number of Days on which Appreciable Rain Fell	Number of Foggy Days	Total Rainfall
January	54.2	74.0	38.0	0	0	70.0	N.W.	17	18	12	1	1	0	0.04
February	52.9	76.0	38.5	0	0	75.1	N.W.	35	14	10	4	12	0	4.51
March	57.2	82.2	43.5	0	0	79.1	N.W.	24	14	13	4	1	0	0.02
April	59.0	79.6	44.4	0	0	75.8	N.W.	30	5	15	10	8	0	2.14
May	62.1	79.0	47.5	0	0	73.9	W.	20	9	11	11	3	0	0.47
June	64.6	78.0	54.0	0	0	80.5	N.W.	20	8	17	5	1	0	0.04
July	66.4	79.0	59.7	0	0	81.2	S.W.	20	3	20	8	1	0	0.01
August	66.2	77.2	54.0	0	0	79.6	N.W.	21	3	25	3	0	0	T.
September	65.7	79.4	58.0	0	0	83.7	N.W.	24	5	22	3	0	0	T.
October	64.5	85.0	49.8	0	0	72.4	N.W.	20	12	15	4	0	0	T.
November	59.2	82.0	44.4	0	0	76.8	N.W.	18	15	8	7	4	0	2.08
December	54.6	74.5	35.5	0	0	70.7	N.E.	36	21	5	5	4	0	1.14
Sums	726.6	945.9	567.3			918.8		285	127	173	65	35	0	10.45
Means	60.6	78.8	47.3	0	0	76.6	N.W.	23.8	10.6	14.4	5.4	2.9	0	0.84

Average Precipitation in San Diego County.

	January	February	March	April	May	June	July	August	September	October	November	December
Fort Yuma	0.35	0.40	0.14	0.10	none	none	0.32	0.66	0.59	0.13	0.32	0.29
Indio	0.44	0.66	0.18	0.08	0.07	none	none	none	none	0.01	0.20	0.65
Julian	4.81	8.25	9.85	5.99	0.73	none	none	none	none	0.55	2.28	5.28
Mammoth Tank	0.20	0.38	0.09	0.13	0.03	0.10	0.07	0.10	none	0.21	0.08	0.54
Poway	2.35	2.91	2.43	2.10	0.64	0.12	0.01	0.04	0.01	0.68	0.64	2.21
San Diego	1.42	2.25	1.36	0.78	0.45	0.08	0.01	0.21	0.04	0.33	0.99	2.24
Whitewater	0.64	1.21	1.04	0.48	none	none	none	0.03	none	0.13	0.38	1.06

TABLE SHOWING THE AVERAGE TEMPERATURE AND RAINFALL OF THE COAST RANGE COUNTIES.

The following counties are represented in the following table: Humboldt, Sonoma, Napa, Marin, Contra Costa, Alameda, Santa Clara, San Francisco, San Mateo, Santa Cruz, Monterey, Santa Barbara, Los Angeles, and San Diego. The lowest recorded temperatures below 20° occur in Sonoma, Napa, Alameda, Santa Clara, Monterey, Los Angeles, and San Diego Counties, as follows: 18°, 15°, 18°, 14°, 18°, 16°, and 19°, respectively; showing that our southern coast counties have nearly as low a temperature as do the northern tier, the lowest (14°) being at Gilroy, Santa Clara County, at an elevation of 261 feet above sea level, and 12° at Ravenna, Los Angeles County, at an elevation of 2,358 feet. A glance at the column of average winter temperature will show what an excellent and high mean average is shown in Santa Barbara and Los Angeles Counties, far excelling in salubrity the far-famed winter resorts of the great Riviera of Italy, which has so lately been shaken by severe earthquake shocks. There is not a place in Santa Barbara or Los Angeles Counties (until an elevation of 1,000 feet has been reached) but what exceeds from 3° to 6° in its mean average winter temperature that of any place in Italy.

STATIONS AND COUNTIES.

Stations and Counties.	Elevation—Feet	Average Winter Temperature	Average Spring Temperature	Average Summer Temperature	Average Autumn Temperature	Average Annual Temperature	Highest Temperature	Lowest Temperature	Average Seasonal Rainfall—Inches
<i>Humboldt County:</i>									
Cape Mendocino	637	46.7	49.1	54.5	53.9	51.0	90	28	19.50
Hydesville		45.6	52.0	59.1	55.9	53.2	84	24	38.49
Christmas Prairie, Blue Lake P. O.		49.5	49.6	63.1	54.1	54.1	98	23	76.11
<i>Sonoma County:</i>									
Petaluma	10	48.2	55.9	64.2	57.7	56.5	103	18	22.32
<i>Napa County:</i>									
Calistoga		48.6	58.9	72.0	60.2	59.9	106	15	31.83
Napa	20	48.9	59.6	69.6	59.1	59.3	104	18	23.36
<i>Marin County:</i>									
Angel Island	50	52.1	56.3	62.0	58.6	57.3	93	28	21.85
<i>Contra Costa County:</i>									
Martinez	9	48.2	58.0	68.4	60.6	58.8	96	26	17.10
Antioch	25	46.0	60.6	74.1	62.0	60.7	109	20	11.70
Byron	33	49.5	64.4	80.7	64.4	64.6	112	24	12.84
Brentwood	80	47.7	59.1	74.5	63.7	61.4	109	21	11.26
<i>Alameda County:</i>									
Oakland	25	49.8	55.3	60.5	56.7	55.6	103	25	24.54
Niles	87	49.6	58.2	66.9	60.4	58.8	108	26	17.14
Midway	356	47.2	59.0	77.0	63.9	61.8	106	20	7.00
Pleasanton	360	48.1	59.8	73.0	62.8	60.7	102	18	17.92
Livermore	485	51.4	58.5	70.8	63.8	61.1	112	24	13.87
<i>Santa Clara County:</i>									
San José	94	49.2	56.6	66.2	58.9	58.0	108	24	12.95
Gilroy	261	47.3	58.4	68.0	59.6	58.3	110	14	19.86
Tennant	335	50.2	58.4	70.5	61.2	60.1	106	18	20.66
<i>San Francisco County:</i>									
Fort Mason, Black Point ..	80	50.8	58.3	62.6	57.3	57.3	86	29	16.42
Presidio of San Francisco ..	58	48.6	55.0	58.4	56.0	54.5	95	28	19.73
San Francisco	60	51.3	54.6	58.5	58.2	55.7	95	33	24.25
<i>San Mateo County:</i>									
San Mateo	30	48.3	55.9	63.5	57.5	56.3	104	25	19.03
Menlo Park	72	47.6	58.4	67.1	57.4	57.6	99	20	15.10
<i>Santa Cruz County:</i>									
Santa Cruz	25	51.8	57.7	62.2	59.6	57.8	98	30	25.88
<i>San Benito County:</i>									
Hollister	292	50.6	59.2	67.1	61.0	59.5	109	21	11.94
<i>Monterey County:</i>									
Pajaro	31	49.9	56.6	60.7	56.3	55.9	99	22	18.89
Monterey	42	50.9	56.7	61.6	57.1	56.6	90	25	14.96
Salinas	75	47.3	54.9	59.0	55.0	54.1	96	20	13.75
Chualar	111	49.9	54.5	59.4	56.2	55.0	114	19	14.19
Soledad	188	48.3	58.7	66.4	59.9	58.3	112	18	8.94
<i>Santa Barbara County:</i>									
Santa Barbara	30	54.3	59.4	67.7	63.1	61.1	102	31	16.92
<i>Los Angeles County:</i>									
Anaheim	250	56.0	64.3	73.1	66.7	65.0	108	26	11.01
Los Angeles	334	53.6	58.4	67.8	62.7	60.6	112	28	17.64
Spadra	705	54.4	62.9	74.5	65.5	64.3	115	28	12.39
San Fernando	1,066	53.0	60.8	72.9	65.7	63.1	113	23	15.02
Newhall	1,268	48.3	58.9	74.0	62.3	60.9	114	18	14.63
Ravenna	2,358	47.0	58.1	73.1	59.7	59.5	110	12	11.72
<i>San Diego County:</i>									
San Diego	40	54.6	58.1	66.8	62.6	60.5	101	32	11.01
Poway		50.7	57.6	68.8	60.8	59.5	110	21	14.15
Fall Brook	700	51.6	57.4	68.2	60.3	59.4	113	27	17.75
Mammoth Tank	265	57.3	74.0	97.1	77.8	76.6	130	25	2.21
Indio	12	55.6	73.1	91.8	74.7	73.8	121	19	2.32

Mammoth Tank and Indio are situated in the eastern portion of San Diego County, and really have a temperature belonging more to the desert counties than to those of the coast. This note will therefore explain the cause of such a difference in its seasonal and yearly average temperature and the smallness of the average seasonal rainfall.

SANTA CLARA COUNTY.

Santa Clara, one of the most prominent agricultural counties in the State, is bounded on the north by Alameda, on the south by San Benito, on the east by Stanislaus and Merced, and on the west by San Mateo and Santa Cruz. A well defined valley runs through it, formed by the Coast Range proper, and Monte Diablo chain. Mt. Bache is the highest point on the west, whilst Mt. Day, Mt. Hamilton (4,009 feet), and Blue Ringe and Pacheco Peak, tower up on the west.

LICK OBSERVATORY.

A summary of the meteorological observations, of each month of the year from January, 1881-85, to December, 1881-85, at the Lick Observatory, Mt. Hamilton:

January.

Highest temperature in January, 1881-85, 64°.
 Lowest temperature in January, 1881-85, 14°.
 Extreme range of temperature in January, 1881-85, 50°.
 Mean maximum temperature for January, 1881-85, 47°.
 Mean annual maximum temperature for 1881-85, 63°.
 Mean minimum temperature for January, 1881-85, 34°.
 Mean annual minimum temperature for 1881-85, 45°.
 Number of days on which rain or snow fell: In January, 1881, 11; 1882, 10; 1883, 4; 1884, 8; 1885, 6.

What winds bring rain and snow:

Rain with N. winds	0 times.	Rain with S. winds	7 times.
Rain with N.E. winds	0 times.	Rain with S.W. winds	1 time.
Rain with E. winds	0 times.	Rain with W. winds	0 times.
Rain with S.E. winds	14 times.	Rain with N.W. winds	1 time.

Greatest rainfall in January, 1881-85, 5.60 inches.
 Least rainfall in January, 1881-85, 1.99 inches.
 Extreme range of rainfall in January, 1881-85, 3.61 inches.
 Mean rainfall in January, 1881-85, 3.47 inches.
 Mean annual rainfall in 1881-84, 43.74 inches

February.

Highest temperature in February, 1881-85, 71°.
 Lowest temperature in February, 1881-85, 12°.
 Extreme range of temperature in February, 1881-85, 59°.
 Mean maximum temperature for February, 1881-85, 50°.
 Mean annual temperature for 1881-85, 63°.
 Mean minimum temperature for February, 1881-85, 33°.
 Mean annual minimum temperature for 1881-85, 45°.
 Number of days on which rain or snow fell in February, 1881, 12; 1882, 7; 1883, 5; 1884, 10; 1885, 3.

What winds bring rain and snow:

Rain with N. winds	0 times.	Rain with S. winds	6 times.
Rain with N.E. winds	1 time.	Rain with S.W. winds	2 times.
Rain with E. winds	0 times.	Rain with W. winds	0 times.
Rain with S.E. winds	10 times.	Rain with N.W. winds	4 times.

Greatest rainfall in February, 1881-85, 12.76 inches.
 Least rainfall in February, 1881-85, 0.57 inches.
 Extreme range of rainfall in February, 1881-85, 12.19 inches.
 Mean rainfall in February, 1881-85, 5.19 inches.
 Mean annual rainfall in 1881-85, 43.74 inches.

March.

Highest temperature in March, 1881-85, 80°.
 Lowest temperature in March, 1881-85, 18°.
 Extreme range of temperature in March, 1881-85, 62°.
 Mean maximum temperature for March, 1881-85, 55°.
 Mean annual maximum temperature for 1881-85, 63°.
 Mean minimum temperature for March, 1881-85, 34°.
 Mean annual minimum temperature, 1881-85, 45°.

Number of days on which rain or snow fell in March, 1881, 4; 1882, 8; 1883, 6; 1884, 13; 1885, 3.

What winds bring rain and snow:

Rain with N. winds	0 times.	Rain with S. winds	5 times.
Rain with N.E. winds	0 times.	Rain with S.W. winds	1 time.
Rain with E. winds	0 times.	Rain with W. winds	0 times.
Rain with S.E. winds	15 times.	Rain with N.W. winds	1 time.

Greatest rainfall in March, 1881-85, 16.35 inches.

Least rainfall in March, 1881-85, 1.13 inches.

Extreme range of rainfall in March, 1881-85, 15.22 inches.

Mean rainfall in March, 1881-85, 6.54 inches.

Mean annual rainfall in 1881-85, 43.74 inches.

April.

Highest temperature in April, 1881-85, 82°.

Lowest temperature in April, 1881-85, 21°.

Extreme range of temperature in April, 1881-85, 61°.

Mean maximum temperature for April, 1881-85, 59°.

Mean annual temperature for 1881-85, 63°.

Mean minimum temperature for April, 1881-85, 36°.

Mean annual minimum temperature for 1881-85, 45°.

Number of days on which rain or snow fell: In April, 1881, 5; 1882, 7; 1883, 8; 1884, 11; 1885, 11.

What winds bring rain and snow:

Rain with N. winds	5 times.	Rain with S. winds	10 times.
Rain with N.E. winds	1 time.	Rain with S.W. winds	4 times.
Rain with E. winds	0 times.	Rain with W. winds	0 times.
Rain with S.E. winds	5 times.	Rain with N.W. winds	10 times.

Greatest rainfall in April, 1881-85, 11.96 inches.

Least rainfall in April, 1881-85, 0.98 inch.

Extreme range of rainfall in April, 1881-85, 10.98 inches.

Mean rainfall in April, 1881-85, 4.48 inches.

Mean annual rainfall in 1881-85, 43.74 inches.

May.

Highest temperature in May, 1881-85, 90°.

Lowest temperature in May, 1881-85, 28°.

Extreme range of temperature in May, 1881-85, 62°.

Mean maximum temperature for May, 1881-85, 68°.

Mean annual maximum temperature for 1881-85, 63°.

Mean minimum temperature for May, 1881-85, 48°.

Mean annual minimum temperature for 1881-85, 45°.

Number of days on which rain or snow fell: In May, 1881, 1; 1882, 2; 1883, 8; 1884, 3; 1885, 1.

What winds bring rain and snow:

Rain with N. winds	0 times.	Rain with S. winds	1 time.
Rain with N.E. winds	0 times.	Rain with S.W. winds	5 times.
Rain with E. winds	0 times.	Rain with W. winds	0 times.
Rain with S.E. winds	6 times.	Rain with N.W. winds	2 times.

Greatest rainfall in May, 1881-85, 7.56 inches.

Least rainfall in May, 1881-85, 0.09 inch.

Extreme range of rainfall in May, 1881-85, 7.47 inches.

Mean rainfall in May, 1881-85, 1.91 inches.

Mean annual rainfall in May, 1881-84, 43.74 inches.

June.

Highest temperature in June, 1881-85, 92°.

Lowest temperature in June, 1881-85, 35°.

Extreme range of temperature in June, 1881-85, 57°.

Mean maximum temperature for June, 1881-85, 72°.

Mean annual temperature for June, 1881-85, 63°.

Mean minimum temperature for June, 1881-85, 51°.

Mean annual minimum temperature for 1881-85, 45°.

Number of days on which rain or snow fell in June, 1881, 1; 1882, 1; 1883, 0; 1884, 7; 1885, 2.

What winds bring rain and snow:

Rain with N. winds	0 times.	Rain with S. winds	6 times.
Rain with N.E. winds	0 times.	Rain with S.W. winds	0 times.
Rain with E. winds	0 times.	Rain with W. winds	2 times.
Rain with S.E. winds	2 times.	Rain with N.W. winds	0 times.

Greatest rainfall in June, 1881-85, 3.85 inches.

Least rainfall in June, 1881-85, 0 inches.

Extreme range of rainfall in June, 1881-85, 3.85 inches

Mean rainfall in June, 1881-85, 1.12 inches.

Mean annual rainfall in 1881-84, 43.74 inches.

July.

Highest temperature in July, 1881-85, 93°.

Lowest temperature in July, 1881-85, 41°.

Extreme range of temperature in July, 1881-85, 52°.

Mean maximum temperature for July, 1881-85, 81°.

Mean annual maximum temperature for 1881-85, 63°.

Mean minimum temperature for July, 1881-85, 60°.

Mean annual minimum temperature for 1881-85, 45°.

Number of days on which rain or snow fell in July, 1881, 0; 1882, 0; 1883, 0; 1884, 0; 1885, 0.

What winds bring rain and snow:

Rain with N. winds.....	0 times.	Rains with S. winds.....	0 times.
Rain with N.E. winds.....	0 times.	Rain with S.W. winds.....	0 times.
Rain with E. winds.....	0 times.	Rain with W. winds.....	0 times.
Rain with S.E. winds.....	0 times.	Rain with N.W. winds.....	0 times.

Greatest rainfall in July, 1881-85, 0 inches.

Least rainfall in July, 1881-85, 0 inches.

Extreme range of rainfall in July, 1881-85, 0 inches.

Mean rainfall in July, 1881-85, 0 inches.

Mean annual rainfall in 1881-85, 43.74 inches.

August.

Highest temperature in August, 1881-85, 96°.

Lowest temperature in August, 1881-85, 39°.

Extreme range of temperature in August, 1881-85, 57°.

Mean maximum temperature for August, 1881-85, 80°.

Mean annual maximum temperature for 1881-85, 63°.

Mean minimum temperature for August, 1881-85, 62°.

Mean annual minimum temperature for 1881-85, 45°.

Number of days on which rain or snow fell in August, 1881, 0; 1882, 0; 1883, 0; 1884, 1; 1885, 0.

What winds bring rain and snow:

Rain with N. winds.....	0 times.	Rain with S. winds.....	0 times.
Rain with N.E. winds.....	0 times.	Rain with S.W. winds.....	0 times.
Rain with E. winds.....	0 times.	Rain with W. winds.....	0 times.
Rain with S.E. winds.....	1 time.	Rain with N.W. winds.....	0 times.

Greatest rainfall in August, 1881-85, 0.15 inch.

Least rainfall in August, 1881-85, 0 inches.

Extreme range of rainfall in August, 1881-85, 0.15 inch.

Mean rainfall in August, 1881-85, 0.03 inch.

Mean annual rainfall in 1881-85, 43.74 inches.

September.

Highest temperature in September, 1880-85, 93°.

Lowest temperature in September, 1880-85, 34°.

Extreme range of temperature in September, 1880-85, 59°.

Mean maximum temperature for September, 1880-85, 75°.

Mean annual maximum temperature for 1880-85, 63°.

Mean minimum temperature for September, 1880-85, 55°.

Mean annual minimum temperature for 1880-85, 45°.

Number of days on which rain or snow fell in September, 1881, 0; 1882, 0; 1883, 0; 1884, 1; 1885, 0.

What winds bring rain and snow:

Rain with N. winds.....	0 times.	Rain with S. winds.....	0 times.
Rain with N.E. winds.....	0 times.	Rain with S.W. winds.....	0 times.
Rain with E. winds.....	0 times.	Rain with W. winds.....	0 times.
Rain with S.E. winds.....	1 time.	Rain with N.W. winds.....	0 times.

Greatest rainfall in September, 1881-85, 0.65 inch.

Least rainfall in September, 1881-85, 0 inches.

Extreme range of rainfall in September, 1881-85, 0.65 inch.

Mean rainfall for September, 1881-85, 0.31 inch.

Mean annual rainfall for 1881-84, 43.74 inches.

October.

Highest temperature in October, 1880-85, 88°.

Lowest temperature in October, 1880-85, 25°.

Extreme range of temperature in October, 1880-85, 63°.

Mean maximum temperature for October, 1880-85, 63°.

Mean annual maximum temperature, 1880-85, 63°.

Mean minimum temperature for October, 1880-85, 46°.

Mean annual minimum temperature for 1880-85, 45°.

Number of days on which rain or snow fell in October, 1880, 0; 1881, 3; 1882, 8; 1883, 5; 1884, 4; 1885, 1.

What winds bring rain and snow:

Rain with N. winds.....	0 times.	Rain with S. winds.....	2 times.
Rain with N.E. winds.....	0 times.	Rain with S.W. winds.....	0 times.
Rain with E. winds.....	0 times.	Rain with W. winds.....	0 times.
Rain with S.E. winds.....	14 times.	Rain with N.W. winds.....	0 times.

Greatest rainfall in October, 1881-85, 6.16 inches.

Least rainfall in October, 1881-85, 0.05 inch.

Extreme range of rainfall in October, 1881-85, 6.11 inches.

Mean rainfall in October, 1881-85, 2.57 inches.

Mean annual rainfall in 1881-84, 43.74 inches.

November.

Highest temperature in November, 1880-84, 76°.

Lowest temperature in November, 1880-84, 26°.

Extreme range of temperature in November, 1880-84, 50°.

Mean maximum temperature for November, 1880-84, 55°.

Mean annual maximum temperature for 1880-84, 62°.

Mean minimum temperature for November, 1880-84, 37°.

Mean annual minimum temperature for 1880-84, 45°.

Number of days on which rain or snow fell in November, 1880, 3; 1881, 3; 1882, 3; 1883, 3; 1884, 1.

What winds bring rain and snow:

Rain with N. winds.....	0 times.	Rain with S. winds.....	3 times.
Rain with N.E. winds.....	1 time.	Rain with S.W. winds.....	0 times.
Rain with E. winds.....	0 times.	Rain with W. winds.....	0 times.
Rain with S.E. winds.....	6 times.	Rain with N.W. winds.....	1 time.

Greatest rainfall in November, 1881-84, 3.45 inches.

Least rainfall in November, 1881-84, 0.01 inch.

Extreme range of rainfall in November, 1881-84, 3.44 inches.

Mean rainfall in November, 1881-84, 1.46 inches.

Mean annual rainfall in 1881-84, 43.74 inches.

December.

Highest temperature in December, 1880-84, 72°.

Lowest temperature in December, 1880-84, 18°.

Extreme range of temperature in December, 1880-84, 54°.

Mean maximum temperature for December, 1880-84, 51°.

Mean annual maximum temperature for 1880-84, 62°.

Mean minimum temperature for December, 1880-84, 36°.

Mean annual minimum temperature for 1880-84, 45°.

Number of days on which rain or snow fell in December, 1880, 16; 1881, 9; 1882, 5; 1883, 6; 1884, 13.

What winds bring rain and snow:

Rain with N. winds.....	1 time.	Rain with S. winds.....	1 time.
Rain with N.E. winds.....	3 times.	Rain with S.W. winds.....	0 times.
Rain with E. winds.....	0 times.	Rain with W. winds.....	0 times.
Rain with S.E. winds.....	26 times.	Rain with N.W. winds.....	0 times.

Greatest rainfall in December, 1880-84, 33.84 inches.

Least rainfall in December, 1880-84, 1.63 inches.

Extreme range of rainfall in December, 1880-84, 31.91 inches.

Average Precipitation in Santa Clara County.

	January	February	March	April	May	June	July	August	September	October	November	December
Gilroy.....	4.72	3.25	3.31	1.90	0.49	0.16	none	none	0.20	1.01	1.93	2.72
Mount Hamilton.....	3.68	6.06	6.05	4.54	2.34	1.31	none	0.04	0.19	2.27	1.60	7.18
San José.....	2.88	2.31	2.84	1.74	0.51	0.25	none	none	0.08	0.67	0.82	1.66
Tennant.....	4.27	4.02	4.36	3.07	0.93	0.23	none	none	0.08	0.58	0.97	3.60

ALAMEDA COUNTY.

From the "Oakland Tribune."

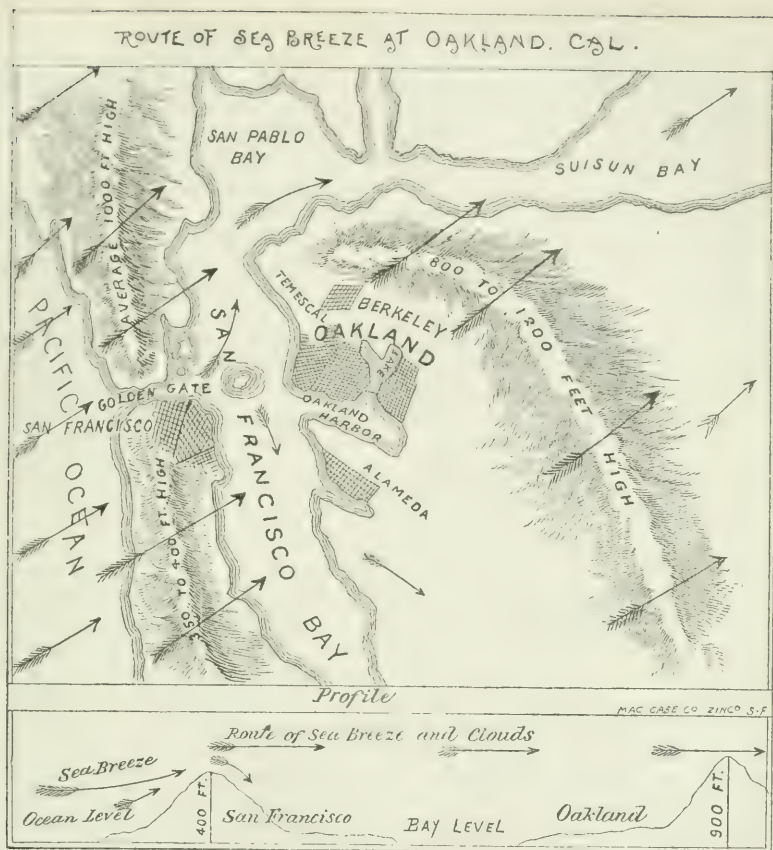
By WILLIAM R. DAVIS, Mayor of Oakland.

No stranger realizes, and few residents understand, how Oakland has such an equable and delightful climate compared with that of San Francisco, although Oakland is only 6 or 8 miles, just across the bay, east of San Francisco.

Below is a diagram, which, with a few words of introduction, will at once speak familiarly to the reader. To the westward of us, some 12 or 14 miles, is the Pacific Ocean, beating against the feet of the first row of Coast Range hills. The Golden Gate is a pass through this first row of hills, being about 6 miles long and over a mile wide. The bay of San Francisco and the ocean connect through this channel or gate. At the inner or eastern end of this channel, the western bay shore lines turn northward and southward, substantially parallel with the ocean shore line. San Francisco being on the northeastern corner of the peninsula, south of the Golden Gate, and between the ocean and the bay. This peninsula is of about the same width, from bay to ocean, as the distance eastward from San Francisco across the bay to Oakland—say 6 miles. On the Oakland side the land rises from the bay level, on the gentlest slope, back to the second row of Coast Range hills. This slope extends from Berkeley on the north (a town of 5,000 inhabitants, where the University of California is located), down in a southeasterly direction to, and far beyond, the Alameda and Santa Clara County line. The soil of this slope is generally a warm, sandy loam; fertile, and easy of cultivation, and now produces almost every berry, fruit, plant, tree, cereal, vegetable, shrub, and flower, grown from Oregon to Arizona. From Berkeley, on the north, to the county line, on the south, is about 35 miles. This slope varies in width from 3 miles on the northern end, to more than twice that width as you proceed southward. At Oakland its width is approximately 5 miles.

The elevation of this slope, before reaching the rolling foothills, is in the body of the city from 20 to 40 feet above the tide level. The eastern part of Oakland is upon the rising ground of the foothills. The two rows of coast hills above mentioned, run nearly parallel, from southeast to northwest, and both lie substantially at right angles to the route of the trade winds, or prevailing sea breeze, coming off the ocean from the southwest, during the summer and fall months—from about the latter part of May, to the middle of September. We are now ready to proceed to the consideration of a matter, the importance of which cannot be overestimated. Taken with the conceded advantages of location, transit, educational institutions, good order, freedom from debt, wealth, resources, and soil, it makes Oakland the most desirable spot for habitation on the Pacific Coast. If the point is new, that will not detract from its importance.

Let us now look at the diagram:



The arrows show the course of the sea breeze. The profile at the bottom of the diagram shows substantially the hill obstruction which the sea breeze encounters in its northeasterly course. I need scarcely mention that the summer heat of the interior land surface, lying to the eastward, rarifies and raises the atmosphere there, and draws in the cooler atmosphere from the adjacent ocean, just as the heated air over the fire rises in the chimney and draws in the cooler air from about the fireplace.

Now follow the arrows. Commencing at the ocean, the ocean breeze (bearing much or little fog) literally bumps against and rises above the first row of coast hills. These hills are, say, 400 feet high south of the Golden Gate, and twice that height north of the Golden Gate. This pitches the general breeze 400 to 800 feet above the sea level in its flight inland. It has then only from 10 to 14 miles to go until it would encounter the second row of coast hills. This second row is substantially twice as high as the first. The result, and the fact is, that the general ocean breeze cannot and does not descend in its course anywhere near the water level between these two rows of hills. Being pitched up by range No. 1, it bears its moisture and maintains its course high enough to pass over and upon the top of range No. 2. The fog clouds, as a matter of fact, scrape the top of the second row of hills and then pass on northeastward.

This leaves Oakland and the slope of which I have spoken in a triangle. Consider the triangle standing vertically. The hill barrier to the east would lie behind the imaginary upright line of the triangle; the land slope would be its base line, and the path of the ocean breeze would be the upper line of the triangle, or its hypotenuse. In this triangle the air is free from fog, and moves gently eastward with just enough motion, bracing coolness, and refreshing stimulus to make the temperature delightful, life comfortable, and healthfulness certain. No sanitary department elsewhere can ever do for any city what nature is steadily doing for the city of Oakland. The fog clouds pass overhead at an elevation of from 500 to 2,000 feet. This is nature's sunshade, catching the rays of the summer sun and casting cool and grateful shadows on the land surface below, whilst it leaves that surface free from wind and dampness.

There is a horizontal triangle of protection also. At the Golden Gate, this sea breeze can and does come in on the water level; but by reason of the conformation of the hills, this tongue of wind becomes forked—one part traveling northward and the other to the southeast. The small arrows show the course and divisions of this lesser current.

One part bears northward around the point of hills north of Berkeley; the other bears southeast down the bay. The former is quite strong, the latter rather weak. The reason for this is clear; the former runs in the direction of the prevailing sea breeze overhead, and hence maintains its velocity; the latter turns down the bay, almost at right angles with the general overcurrent, and hence its force is dissipated and weakened.

The forking of the Golden Gate current leaves Oakland again in the triangle of repose. Of this horizontal triangle the base is at the hills to the eastward, and the other two sides are the two forks of the Golden Gate's current of wind. For these reasons, considering these two triangles, I think I may justly say Oakland is in the triangle of peace. Under these circumstances, it is not strange that strangers do not realize the fact that there is such a marked difference between the climate of San Francisco and that of Oakland. I believe these triangles furnish the solution of the question. On this point, too, there is a singular little fact well worth considering. That is this: when water runs out of a waterspout or trough, if the trough is uneven on the under side, some water drips or curls under, while the main stream goes ahead. Just so in this case.

The general front of the fog-bearing sea breeze bumps against and rises over the uneven top of the San Francisco hills; a little of the wind curls under at the uneven summit of the first row of hills, and bears down on San Francisco. But this curling down of the cloud current goes no further, practically.

This curling down, and the two triangles of repose, account, in my judgment, for the phenomenal fact that Oakland, only 6 or 8 miles from San Francisco, has a climate so much more benignant, and as different as though the two cities were a hundred miles apart.

The views here given will account for the following facts: (1) Why a stiff summer sea breeze bears down in the streets of San Francisco; (2) why that wind brings fog down with it to the land surface there; (3) why the waves on the bay of San Francisco run higher on the line extending northeasterly from the inner face of the Golden Gate than elsewhere; (4) why the summer wind is strong across San Pablo Bay and up the Straits of Carquinez; (5) why Oakland has absolutely no fog down in her streets, when it is down on the west side of the bay; (6) why there is no surface trade wind at Oakland; and (7) why the fogs of the San Francisco peninsula become grateful clouds over Oakland and vicinity.

In the body of the city there is a salt water lake, connecting by tide-gates with the harbor and bay. This lake, or water park, belongs to the city. Its waters can be renewed with each ebb and flow of the tide. The main sewer of the city is flushed from it. When tide is low in the bay, the high tide caught in the lake is turned in at the eastern end of this main sewer and rushes through, discharging into the bay. Proceedings are well under way for the beautifying of this lake or water park. The improvement will include a boulevard around it, a distance of about three miles. This boulevard will be 150 feet wide, will provide for footmen, street cars, and a double driveway, and will also involve the dredging of the lake to a uniform depth of about five feet. This, when completed, will furnish at once as beautiful a land drive and as beautiful a water park as can be found in this country. We have eight mid-town plazas now. The streets here are already the best in California. But there is a determination in the community, now formulating into action, which, in lasting works, will soon make man's contribution of permanent improvements here worthy of addition to nature's unstinted gifts.

The environments of this slope duplicate those of Athens, which is one of the reasons why Oakland is designated the Athens of the Pacific. This is not a fanciful, but a real resemblance. The hills about Athens and also the Grecian archipelago are one with the hills and bays here. The clouds, the temperature, the sky, the breeze, the landscape, the half shadowed country, are substantially the counterpart of ancient Greece. Whenever the Creator casts a kindly handful of sunbeams on old Greece, he, next morning, casts gently another handful over the new Greece—this Athenian slope.

This slope is well watered and has an abundant rainfall every season. Such a thing as drought or irrigation upon it was never dreamed of and will never be necessary. So fertile is this soil from Berkeley down to the county line that trees, flowers, and shrubs, planted and properly tended, as for example about a new house, will at the end of the second or third season make the spot look as if it had been occupied and cultivated ten years. I have seen this actual result in almost numberless cases in and about Oakland. The heliotrope grows outdoors in this city without so much as the shelter of a newspaper or sheet throughout the winter, and frequently attains a height of from eight to twelve feet. Geraniums thrive side by side with the heliotrope, and often reach a height of from six to ten feet. This slope is the paradise of flower and tree life as well as of animal life and human existence. The average annual variation in temperature at Oakland between summer and winter temperature—taking the average temperature of the months including winter and those including summer—is only 8°. Upon this inviting slope the most exacting and painstaking home-seekers, old Pacific Coast residents, who know the entire coast, have been and are now locating their homes. The stranger, not knowing the relative merits of different localities, may be satisfied with a better country than his, though not the best; but the old resident (from Washington Territory, Oregon, Nevada, and California) knows that the garden spot, the paradise of the Pacific Coast, is upon the slopes and in the valleys about the bay of San Francisco.

Table Showing the Comparative Annual Meteorology of 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, and 1887.

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Mean temperature of the year.....	55.09	56.29	55.28	55.11	53.69	55.62	54.49	54.66	55.85	57.71	56.36	55.14
Mean temperature, warmest day.....	74.00	76.00	69.33	75.33	70.66	70.00	69.33	84.06	72.11	70.00	70.33	75.93
Mean temperature, coldest day.....	35.00	41.63	37.00	33.66	41.00	42.00	35.00	32.33	39.00	46.00	41.00	33.66
Maximum temperature for year.....	97.30	96.00	84.00	93.00	89.00	87.00	84.00	103.00	88.00	89.00	91.00	101.00
Minimum temperature for year.....	30.00	30.00	27.00	27.00	29.00	31.00	30.00	25.00	28.00	27.00	30.00	31.00
Greatest daily variation of temperature.....	33.00	38.00	33.00	46.00	36.00	35.00	31.00	30.00	30.00	36.00	39.00	33.00
Least daily variation of temperature.....	2.00	1.00	2.00	-----	1.00	1.00	1.00	1.00	1.00	00.00	1.00	1.00
Greatest monthly range of temperature.....	49.00	47.00	46.00	46.00	48.00	40.00	42.00	50.00	45.00	38.00	41.00	41.00
Least monthly range of temperature.....	19.00	25.00	23.00	30.00	28.00	21.00	19.00	29.00	19.00	19.00	27.00	20.00
Average daily range of temperature for year.....	14.94	14.61	13.65	12.96	14.10	13.40	12.80	12.81	11.64	11.44	13.16	13.49
Average monthly range of temperature for year.....	31.92	35.50	32.50	38.00	34.91	32.00	31.16	37.58	30.00	29.16	31.66	31.05
Yearly range of temperature.....	67.00	66.00	57.00	66.00	60.00	56.00	54.00	65.00	60.00	62.00	61.00	70.00
Mean relative humidity for year.....	83.00	83.11	81.71	82.29	83.70	83.25	82.57	83.71	85.39	86.74	87.15	88.53
Highest relative humidity for year.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Lowest relative humidity for year.....	40.00	34.40	38.60	39.00	27.00	29.00	28.70	33.90	38.10	41.50	26.70	41.05
Greatest variation in humidity in 24 hours.....	49.09	51.20	45.06	58.00	54.40	37.40	65.70	48.80	41.00	43.80	66.50	51.00
Least variation in humidity in 24 hours.....	.05	.01	.02	.30	.20	.30	.40	.30	.39	.80	1.50	.00
Rainfall in inches during year.....	21.56	11.12	31.71	28.91	28.17	26.07	18.87	15.76	38.20	22.58	22.24	16.89
Rainfall in inches in agricultural years from July 1, 1876, to July 1, 1887.....	28.55	12.36	32.33	29.55	23.81	31.24	18.13	20.22	31.10	17.95	32.21	22.24
Number of clear and fair days during year.....	268	301	255	296	258	276	276	266	240	238	239	277
Number of cloudy days during year.....	98	64	110	99	108	89	89	90	106	127	126	88
Number of days in which rain fell.....	63	68	78	86	53	67	72	53	85	67	63	58
Number of foggy mornings.....	23	8	17	19	27	28	15	15	19	20	21	18
Number of mornings frost was seen.....	51	44	64	63	86	52	77	105	92	118	92	97
Number of mornings frost was not seen.....	35	35	36	46	62	47	50	58	38	27	55	49
Wind, direction from S.W. and W.....	342	364	311	355	406	402	345	428	382	426	389	414
Wind, direction from N.W. and W.....	210	150	173	150	136	136	150	119	128	112	112	159
Wind, direction from N.E. and N.....	34	63	45	50	59	58	53	29	62	53	45	35
Wind, direction from S.E. and S.....	163	150	163	126	172	138	143	91	151	142	158	129
Calms.....	340	368	402	372	385	331	404	438	375	362	391	358

SEASONS.											
Mean temperature of spring	54.46	55.18	55.73	56.15	52.97	56.35	54.12	54.63	55.59	58.08	55.06
Mean temperature of summer	60.40	61.17	59.36	60.07	58.35	60.27	60.06	61.16	61.89	61.23	61.60
Mean temperature of autumn	57.75	57.67	56.92	56.73	55.86	54.78	56.41	54.25	57.07	59.52	56.89
Mean temperature of winter	48.20	50.39	50.12	47.60	45.38	51.10	46.80	46.20	47.38	51.49	52.12
Difference between warmest and coldest months of spring	4.40	1.49	3.68	.70	9.91	5.12	5.77	5.60	6.16	2.04	8.05
Difference between warmest and coldest months of summer	1.99	1.10	.35	1.26	1.88	1.55	1.13	2.78	2.60	3.25	2.00
Difference between warmest and coldest months of autumn	6.13	7.76	5.93	9.14	7.70	8.79	9.68	10.64	3.99	5.05	8.94
Difference between warmest and coldest months of winter	5.00	6.09	1.28	5.13	2.37	5.34	2.33	5.98	1.56	4.38	5.15
Difference between warmest and coldest months of the year	16.20	12.25	13.06	15.08	15.78	12.38	14.77	19.26	16.38	13.33	14.43
											11.87

FOR TWELVE YEARS.

Mean difference between the coldest and warmest months for twelve years, 17.23; mean temperature for twelve years, 55.43; mean barometer for twelve years, 29.93; mean relative humidity for twelve years, 88.17; mean annual rainfall in inches for twelve years, 23.59.

OAKLAND, ALAMEDA COUNTY.

The rainfall record below was taken by Mr. James Hutchison, of the Bay Nursery, Oakland. It shows the rainfall by months, by years, and by seasons, along with the monthly totals and averages, extending from October, 1873, to date:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year.	Season of	Total for Season
1873										.60	.60	10.18			
1874	5.60	1.80	5.25	1.25	.75	none	none	none	none	2.24	9.18	.31	26.38	1873-74	26.03
1875	6.15	.30	1.65	none	.10	1.64	none	none	none	.30	7.83	4.10	22.07	1874-75	21.57
1876	5.28	4.87	4.55	.93	.45	.24	.10	none	.15	4.74	.25	none	21.56	1875-76	28.55
1877	4.19	1.42	.96	.22	.33	none	.18	none	none	.45	1.62	1.75	11.12	1876-77	12.36
1878	10.82	11.63	4.30	1.18	.40	none	none	none	.57	1.85	.65	.31	31.71	1877-78	32.33
1879	3.84	5.65	7.96	1.17	1.39	.16	none	none	none	.70	2.98	5.06	28.91	1878-79	23.55
1880	1.71	2.19	1.70	8.46	1.04	none	none	none	none	.05	.35	12.57	28.07	1879-80	23.84
1881	10.48	3.95	.88	1.40	.50	1.16	none	none	none	.40	.82	1.49	5.09	1880-81	31.34
1882	2.42	2.05	4.20	1.51	.15	none	none	none	.42	2.65	4.33	1.14	18.87	1881-82	18.13
1883	1.95	.70	3.33	2.20	3.50	none	none	none	1.00	1.03	.90	1.15	15.76	1882-83	20.22
1884	3.81	5.25	8.59	5.79	.55	3.03	none	.25	.35	2.80	.05	7.73	38.20	1883-84	31.10
1885	1.92	.48	1.07	3.12	.10	.08	.02	none	.05	.30	11.11	4.33	22.58	1884-85	17.95
1886	8.12	.30	2.57	5.11	.30	none	.15	none	.05	1.59	.45	3.60	22.24	1885-86	32.21
1887	1.57	7.83	.71	2.35	.10	.05	.01	none	.27	none	.78	3.22	16.89	1886-87	18.45
1888	6.42													1887-88	*6.42
Totals.	74.28	48.42	47.72	34.69	9.66	6.36	.46	.25	3.24	20.12	42.57	60.54	330.53		337.63
Averages	4.952	3.459	3.409	2.478	.690	.454	.033	.018	.233	1.341	2.838	4.036	23.609		24.116

* Up to February 1, 1888.

Average Precipitation in Alameda County.

	January	February	March	April	May	June	July	August	September	October	November	December
Calaveras Valley	3.79	4.23	5.47	5.33	1.85	0.40	none	none	0.26	1.42	1.68	2.35
Livermore	2.62	2.48	2.17	6.36	0.44	0.20	none	none	0.06	0.56	1.32	2.60
Midway	2.52	2.11	0.50	0.39	0.06	none	none	none	none	0.20	0.29	0.55
Niles	3.11	2.90	2.40	1.57	0.61	0.28	none	none	0.06	0.77	1.80	3.29
Oakland	5.11	3.62	3.94	2.19	0.83	0.56	0.03	0.02	0.26	1.41	2.74	3.79
Pleasanton	3.40	3.41	3.81	2.62	0.76	0.29	0.01	none	0.07	0.84	0.99	2.72

SAN FRANCISCO COUNTY.

HIGHEST AND LOWEST TEMPERATURE AT SAN FRANCISCO.

The record following gives the days when the highest temperature was 80° and above, and the minimum temperature when it was 32° and below, compiled by Thomas Tennent, 18 Market Street:

Minimum Temperature of 32° and Below.

1868.	1878.	1881.	1883.
January 7.....30	December 15.....28	November 18.....30	December 15.....30
8.....30	16.....30	20.....32	17.....31
11.....32	17.....29	December 3.....32	28.....32
12.....31	18.....27		
17.....31	19.....29	1882.	1884.
19.....27	20.....32	January 14.....29	January 11.....30
22.....30	21.....28	15.....26	12.....31
1869.	23.....28	17.....29	13.....30
December 19.....31	24.....28	20.....28	14.....32
21.....30	25.....26	21.....29	15.....29
22.....28	26.....26	27.....32	16.....32
	27.....26	29.....29	17.....30
1870.		30.....30	February 7.....30
December 16.....32	1879.	February 2.....29	8.....26
18.....28	January 5.....32	7.....28	9.....27
19.....31	8.....32	8.....31	10.....31
20.....26	15.....31	11.....29	11.....30
21.....32	18.....32	14.....32	12.....22
22.....29	20.....32	18.....30	13.....22
24.....28	26.....31	19.....32	14.....30
	27.....30	20.....27	December 13.....32
1872.	28.....32	21.....31	
November 25.....30	December 23.....31	March 20.....32	1886.
26.....32	24.....29	November 13.....32	January 3.....32
December 16.....30	25.....30	17.....32	6.....32
17.....27	26.....29	18.....32	7.....32
18.....29	27.....28	December 25.....32	9.....31
19.....27	28.....30	29.....32	
20.....29		31.....30	1887.
1873.	1880.		January 16.....31
February 2.....32	January 6.....32	1883.	17.....31
17.....28	13.....32	January 13.....31	February 3.....32
20.....32	28.....28	14.....26	6.....32
25.....29	29.....28	15.....24	22.....31
April 4.....30	30.....30	16.....26	25.....29
5.....28	31.....28	18.....27	November 25.....31
6.....30	February 1.....31	19.....27	26.....29
	2.....30	20.....26	27.....32
1874.	12.....31	21.....26	
December 17.....32	14.....32	22.....29	1888.
18.....32	17.....29	23.....30	January 1.....31
26.....31	March 4.....31	February 3.....26	2.....30
28.....32	13.....32	4.....30	4.....30
30.....31	November 15.....32	5.....26	5.....28
1875.	19.....32	6.....27	6.....26
January 6.....32	20.....32	7.....28	7.....25
1876.	25.....31	8.....28	8.....23
January 21.....31	26.....31	9.....26	9.....28
1878.	27.....31	12.....32	10.....29
December 14.....26	28.....29	16.....31	11.....31
	30.....32	17.....28	14.....27
	1881.	December 11.....32	15.....23
	October 14.....32	12.....29	16.....20
	November 16.....32	13.....28	17.....26
		14.....30	18.....32

Maximum Temperature of 80° and Above.

1867.	1874.	1878.	1883.
April 26.....82	September 2.....86	May 24.....82	September 21.....80
July 5.....83	1875.	September 4.....80	22.....82
6.....93		8.....81	23.....81
7.....90	April 12.....81	1879.	1884.
September 18.....80	24.....81	June 1.....86	May 7.....80
19.....82	June 5.....82	2.....91	July 9.....80
20.....83	September 20.....86	3.....84	10.....82
21.....83	October 6.....80	18.....84	1885.
1868.	7.....80	19.....84	
October 7.....80	1876.	July 31.....81	July 15.....81
1869.	May 7.....86	August 1.....81	September 21.....84
September 24.....81	June 11.....82	24.....82	1886.
25.....82	12.....95	30.....88	
26.....81	15.....81	31.....83	June 8.....81
1870.	16.....82	September 10.....80	August 25.....82
May 6.....84	26.....86	11.....85	September 7.....84
7.....86	July 11.....80	12.....81	8.....87
July 1.....82	August 10.....80	October 18.....81	9.....87
2.....86	September 25.....86	19.....80	10.....85
August 2.....80	1877.	26.....81	1887.
October 5.....80		27.....82	
6.....83	June 8.....93	1880.	May 28.....84
1871.	9.....95	May 26.....81	June 19.....84
October 2.....80	10.....91	27.....85	26.....81
1872.	11.....99	June 1.....83	27.....81
June 21.....82	12.....94	2.....85	28.....81
22.....80	July 12.....82	1883.	September 14.....80
1874.	13.....81		15.....84
May 30.....82	August 26.....80	May 20.....80	26.....85
June 13.....82	September 14.....84	25.....82	October 8.....86
September 1.....81	15.....89	June 5.....88	9.....83
	16.....94	6.....92	10.....80
	17.....91	7.....81	20.....82
	18.....88	July 1.....82	21.....81
	October 7.....82		

RAINFALL AT SAN FRANCISCO.

The rainfall from 1849 to 1875 in the following table was taken from the report of the State Agricultural Society for 1874, and was furnished to that society by Thomas Tennent. The rainfall from 1875 to date is compiled from the reports of the Signal Office:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year	Season of	Inches
1849							none	none	none	3.14	8.66	6.20			
1850	8.34	1.77	4.53	.46	none	none	none	none	.33	none	.92	1.05	17.40	1849-50	33.10
1851	.72	.54	1.94	1.23	.67	none	none	none	1.03	.21	2.12	7.10	15.56	1850-51	7.40
1852	.58	.14	6.68	.26	.32	none	none	none	none	.80	5.31	13.20	27.29	1851-52	18.44
1853	3.92	1.42	4.86	5.37	.35	none	none	.04	.46	.12	2.28	2.32	21.14	1852-53	35.23
1854	3.88	8.04	3.51	3.12	.02	.08	none	.01	.15	2.41	.34	.81	22.37	1853-54	23.87
1855	3.67	4.77	4.64	5.00	1.88	none	none	none	none	none	.67	5.76	26.39	1854-55	23.68
1856	9.40	.50	1.60	2.94	.76	.03	.02	none	.07	.45	2.79	3.75	22.31	1855-56	21.66
1857	2.45	8.59	1.62	none	.02	.12	none	.05	none	.93	3.01	4.14	20.93	1856-57	19.88
1858	4.36	1.83	5.55	1.55	.34	.05	.05	.16	none	2.74	.69	6.14	23.46	1857-58	21.81
1859	1.28	6.32	3.02	.27	1.55	none	none	.02	.03	.05	7.28	1.57	21.39	1858-59	22.22
1860	1.64	1.60	3.99	3.14	2.86	.09	.21	none	none	.19	.58	6.16	20.46	1859-60	22.27
1861	2.47	3.72	4.08	.51	1.00	.08	none	none	.02	none	4.10	9.54	25.52	1860-61	19.00
1862	24.36	7.53	2.20	.73	.74	.05	none	none	none	.40	.15	2.35	38.51	1861-62	49.27
1863	3.63	3.19	2.06	1.04	.26	none	none	none	.03	none	2.55	1.80	14.56	1862-63	13.08
1864	1.83	none	1.52	1.57	.78	none	none	.21	.01	.13	6.68	8.91	21.64	1863-64	10.08
1865	5.14	1.34	.74	.94	.63	none	none	none	.24	.26	4.19	.58	14.06	1864-65	24.73
1866	10.88	2.12	3.04	.12	1.46	.04	none	none	.11	none	3.35	15.16	36.28	1865-66	22.93
1867	5.16	7.20	1.58	2.36	none	none	none	none	.04	.20	3.41	10.69	30.64	1866-67	34.92
1868	9.50	6.13	6.30	2.31	.03	.23	none	none	none	.15	1.18	4.34	30.17	1867-68	38.84
1869	6.35	3.90	3.14	2.19	.08	.02	none	none	.12	1.29	1.19	4.31	22.59	1868-69	21.35
1870	3.89	4.78	2.00	1.53	.20	none	none	none	.03	none	.43	3.38	16.24	1869-70	19.31
1871	3.07	3.76	1.29	1.93	.21	none	none	none	.03	.11	3.72	16.74	30.86	1870-71	14.10
1872	4.22	6.97	1.64	1.10	.16	.02	none	none	.14	.21	2.62	7.25	24.33	1871-72	34.71
1873	2.17	4.24	.78	.52	.01	.08	.03	.15	none	.68	1.31	10.12	20.09	1872-73	18.02
1874	4.85	1.83	3.55	1.04	.34	.08	none	none	.83	2.73	5.92	.28	21.46	1873-74	23.98
1875	6.97	.20	1.08	.02	.11	1.01	none	none	none	.24	7.27	4.15	21.05	1874-75	19.15
1876	7.55	4.92	5.49	1.29	.24	.04	.01	.01	.38	3.36	.25	none	23.54	1875-76	31.19
1877	4.32	1.18	1.08	.20	.18	.91	.02	none	none	.65	1.57	2.66	11.93	1876-77	11.04
1878	11.97	12.52	4.56	1.06	.16	.01	.01	none	.55	1.27	.57	.58	33.26	1877-78	35.18
1879	3.52	4.90	8.75	1.89	2.35	.05	.01	.02	sprin.	.78	4.03	4.46	30.76	1878-79	24.44
1880	2.23	1.87	2.08	10.06	1.12	none	none	none	none	.05	.33	12.33	30.07	1879-80	26.66
1881	8.69	4.64	.90	2.00	.22	.69	none	none	.25	.54	1.94	3.85	23.72	1880-81	29.85
1882	1.68	2.96	3.45	1.22	.21	.04	none	none	.26	2.66	4.18	2.01	18.67	1881-82	16.14
1883	1.92	1.04	3.01	1.51	3.52	.01	none	none	.42	1.48	1.60	.92	15.43	1882-83	20.12
1884	3.94	6.65	8.24	6.33	.23	2.57	sprin.	.04	.33	2.55	.26	7.68	38.82	1883-84	32.38
1885	2.53	.30	1.01	3.17	.04	.19	.06	sprin.	.11	.72	11.78	4.99	24.90	1884-85	18.10
1886	7.42	.24	2.07	5.28	.37	.01	.23	sprin.	.01	1.48	.84	2.07	20.02	1885-86	33.05
1887	1.90	9.24	.84	2.30	.06	.07	sprin.	.01	.29	sprin.	.99	3.34	19.04	1886-87	19.04
1888														1887-88	*
Totals	192.40	142.89	116.62	77.62	23.51	5.67	.65	.72	6.27	32.98	111.06	202.66	896.85		910.22
Averages	5.063	3.760	3.069	2.043	.619	.149	.017	.018	.160	.846	2.846	5.196	23.601		23.951

* Up to February 1, 1888.

SAN FRANCISCO WEATHER SUMMARY FOR 1887.

Compiled in the office of the officer in charge of the Pacific Coast Division Signal Service, by H. E. Wilkinson, Observer Signal Corps:

Table Showing, by Months, the Meteorological Conditions for the Year 1887, at San Francisco, obtained from the Records of the United States Signal Service.

MONTHS.	Mean Monthly Temperature	Maximum Temperature	Minimum Temperature	Number of Days Temperature was Above 90°	Number of Days Temperature was Below 32°	Mean Monthly Relative Humidity	Prevailing Wind Direction	Wind—Highest Velocity	Number of Clear Days	Number of Fair Days	Number of Cloudy Days	Total Number of Days on which Appreciable Rain Fell	Number of Foggy Days	Total Rainfall.
January	51.8	72.9	41.5	0	0	74.3	N.W.	32	18	8	5	1	0	1.90
February	47.0	67.0	33.1	0	0	75.7	N.W.	22	9	10	9	15	0	9.24
March	54.3	78.0	45.0	0	0	75.0	W.	28	12	13	6	4	0	0.84
April	54.5	78.5	43.5	0	0	71.6	W.	32	13	10	1	8	0	2.30
May	55.8	96.9	45.6	1	0	75.4	W.	32	10	13	8	3	0	0.06
June	58.0	90.0	48.5	0	0	75.5	W.	36	13	15	12	1	0	0.07
July	55.2	69.9	49.0	0	0	83.2	W.	35	5	17	19	0	0	T.
August	56.3	73.8	48.7	0	0	81.9	W.	36	9	13	9	0	0	0.01
September	60.4	89.0	49.9	0	0	75.0	W.	35	17	11	2	5	0	0.29
October	62.9	87.0	49.2	0	0	65.0	W.	34	21	8	2	0	0	T.
November	55.2	73.7	42.1	0	0	77.6	W.	25	13	9	8	5	0	0.99
December	51.7	69.3	40.4	0	0	75.0	N. & N.W.	35	12	13	6	12	0	3.34
Sums	663.1	946.0	536.5	1	0	905.2		388	152	140	73	60	0	19.04
Means	55.2	78.8	44.7	0.1	0	75.4	W.	32.3	12.7	11.7	6.1	5.0	0	1.59

Average Precipitation in San Francisco County.

	January	February	March	April	May	June	July	August	September	October	November	December
San Francisco	5.09	3.71	3.18	1.91	0.65	0.15	0.01	0.02	0.14	0.79	2.70	5.27
Alcatraz Island	4.23	3.06	2.09	1.51	0.49	0.17	none	0.02	0.07	0.52	1.74	4.08
Angel Island	4.68	3.48	2.91	2.03	0.50	0.25	none	none	0.13	0.90	2.36	4.55
Fort Mason	3.44	2.94	2.05	1.39	0.54	0.22	none	none	0.10	0.71	1.71	3.13
Fort Point	6.52	3.79	3.07	1.87	0.36	0.04	0.01	none	0.09	0.20	2.30	4.57
Presidio	3.87	3.23	2.57	1.63	0.56	0.16	0.01	none	0.09	0.69	2.27	4.43
Yerba Buena Island	3.89	3.24	2.92	1.86	0.50	0.30	0.03	none	0.09	0.68	1.79	2.48

SANTA BARBARA COUNTY.

GENERAL REVIEW OF THE WEATHER OF SANTA BARBARA, GIVING THE HIGHEST, LOWEST, AND MEAN TEMPERATURE FOR EACH DAY, FROM JANUARY 1, 1887, TO FEBRUARY 1, 1888, INCLUSIVE.

By HUGH D. VAIL.

Some two hundred years ago, when Gawen Lawrie first arrived in America, and settled in Elizabeth as Governor of the new province of East Jersey, he seemed highly pleased, not only with the country, but also with its climate, and wrote back to England that "the weather was admirably situated to the humors of mankind," it being hardly two days in succession of the same character, and that changes they often longed for at home, and could not get, there came quickly.

Now, Santa Barbara has no claim to that sort of praise. Its weather is certainly not "admirably situated to the humors of mankind." They who delight in snow, and ice, and sleet, with now and then a blizzard in winter, and in hailstorms, thunderstorms, and cyclones in summer, cannot be gratified.

All, or nearly all, of the changes here, except the diurnal ones, come slowly—so slowly as to be hardly perceived. Even the change from summer to winter is not striking, except that the former is rainless and the latter is not.

WINTER AT SANTA BARBARA.

Winter, for distinction, is called the "rainy season," but it is not, for all that, a rainy season as many suppose, but only a season of rain. On an average, there are probably fewer rainy days at Santa Barbara than in any place east of the Alleghanies, during the same period; and as a general rule, a great part of the rainfall takes place at night, and is immediately followed by bright and pleasant days. The average annual rainfall is about 17 inches, and is usually more or less irregularly distributed throughout the season from October to May. But sometimes rain does occur on eight to ten days in succession, making it, during that time at least, a real rainy season, and giving the country half the rainfall of the year. Such rains, however, are not common, and when they do occur, are generally followed by long periods of bright, clear weather.

THE SUMMER SEASON.

It is a common opinion in the East that California is a hot place in summer, and so it is in certain parts, for there are deserts in it where the heat is often intense; though even there it is by no means as oppressive as the moist heat of the Atlantic Coast. But on the Pacific, and for many miles inland, the temperature is so modified by the ocean as to be quite comfortable at all seasons, and most especially so in summer at Santa Barbara, whose location is such that it is well protected from the strong sea breezes that prevail at San Francisco, and at most other places along the coast.

As a winter resort it is admitted by all who have tried it by a few months residence, and who, by experience in other places, are qualified to judge, to be unequalled. But if it is relatively so pleasant in winter, it is really far more so in summer, when for months together the weather can be fully relied upon never to interfere with anybody's plans.

WRONG IMPRESSIONS.

To convey to persons only familiar with the variable weather at the East, a correct idea of our Santa Barbara climate, which is peculiar even in California, is no easy matter. Ordinary tables of temperature generally fail to do it. They are rarely read and still more rarely understood. Even the President of the State Board of Health puts the average of the twelve hottest days here last year some 10° too high; while the well known author of "A Santa Barbara Holiday" gives us, unwittingly, a summer temperature of New Orleans, and a winter one as warm as New York in August.

There being then a seeming fallacy in figures, we will omit them and give instead the equivalent month and place in the East whose average this year corresponded with that of the different months at Santa Barbara.

A COMPARATIVE TABLE.

January.....	Equivalent to May at Nantucket.
February.....	Equivalent to May at Atlantic City.
March.....	Equivalent to May at Norfolk.
April.....	Equivalent to May at Portland.
May.....	Equivalent to May at New Haven.
June.....	Equivalent to May at New York.
July.....	Equivalent to May at Philadelphia.
August.....	Equivalent to May at Washington.
September.....	Equivalent to May at Brooklyn.
October.....	Equivalent to May at New London.
November.....	Equivalent to May at Portland.
December.....	Equivalent to May at Portland.

From these comparisons it will be plainly seen that there is no winter here in Santa Barbara, and almost as plainly that there is no summer. The difference in temperature of the two seasons being really less than the difference between May at Portland and May at Philadelphia. The four seasons elsewhere can hardly be said to have any place in our calendar, for they are here strangely stirred up together, resulting, as shown above, in a perpetual spring.

Not only does the thermometer show this, but vegetation here confirms it. Green peas and strawberries are perennial, and so are the ordinary garden vegetables. Some trees blossom in the fall, others in the winter and spring, while roses and many other flowers are always in bloom.

WIND AND DUST.

For the information of such as would like to come here and are kept away by the report in "Harper's Magazine" that Santa Barbara is a windy place, with frequent dust storms, and also subject to fogs, it may be well to admit that we do have dust storms in summer like all other places in Southern California, as well as fogs: but the dust storms are not frequent, but of rare occurrence, and owing to our sheltered position, less violent than elsewhere. Five in a year would probably exceed the average, only one having occurred this year since July.

FOGS FROM THE OCEAN.

Fogs, except on the ocean, can hardly be said to be common in any season. The nearness of the Santa Ynez Range to the coast creates an upward current of air which generally carries the fog, when there is any, far above the earth, and lodges it near the summit of the mountains. From there it not frequently extends out like a canopy, covering half the sky. It is the custom here to call these fogs: but they have little or no effect upon the surface of the ground. The grass and leaves remain dry, and were the mountains not in the background, would be seen only as ordinary clouds.

Our real fogs, those on the surface, occur mainly at night: sometimes flowing in from the Pacific about sunset and disappearing soon after sunrise in the morning; but more frequently rising late in the evening and disappearing again so early in the morning that but few persons would know of there having been any, were it not for the moisture they deposit.

But so far from this place being windy, as asserted, it is, we believe, not only the least so of any part of California, but will in that respect compare favorably with any other place in the Northern Hemisphere. The strong winds that prevail so generally along the Pacific Coast are here almost or quite unknown. Even a stiff breeze, except during a storm, is of rare occurrence.

TABLE OF TEMPERATURE, RAINFALL, ETC., AT SANTA BARBARA, FOR THE YEARS 1885, 1886, AND 1887:

MONTH.	Monthly Mean Temperature.	Mean of Warmest Day.	Mean of Coldest Day.	Highest Temperature.	Lowest Temperature.	Rainfall, Inches.			
1885—January	53.2	57.0	49.5	60.0	39.0	1.23			
February	56.7	65.5	51.5	81.0	41.0	0.07			
March	59.1	62.5	56.0	79.0	45.0	0.35			
April	60.7	70.5	54.0	80.0	44.5	3.00			
May	60.0	64.6	54.0	75.0	44.0	0			
June	62.4	64.5	58.5	83.0	45.0	0			
July	66.1	73.0	62.5	89.0	50.0	0			
August	68.0	76.0	61.5	92.0	52.0	0			
September	66.8	78.8	62.5	103.5	51.5	0			
October	62.9	72.0	58.5	89.5	47.0	0.19			
November	58.9	64.8	50.0	77.5	40.0	9.84			
December	57.2	65.7	52.0	81.5	40.0	2.47			
Annual average	61.2	67.9	55.9	103.5	39.0	17.15			
1886—January	55.0	73.5	47.5	85.0	35.0	5.12			
February	59.6	70.0	45.0	85.0	39.0	1.19			
March	53.1	59.5	46.2	71.0	36.0	2.03			
April	55.7	61.5	50.5	74.0	41.0	3.40			
May	60.5	65.5	54.0	80.5	44.0	0			
June	62.0	67.5	58.3	80.0	48.0	0			
July	66.3	72.0	63.5	84.5	52.5	0			
August	68.2	72.0	63.2	85.0	54.0	0			
September	63.8	68.3	57.0	79.0	48.0	0			
October	58.3	62.5	51.7	79.0	42.0	0.39			
November	56.3	66.5	49.8	83.0	37.5	0.87			
December	55.8	65.8	49.5	81.5	40.0	0.86			
Annual average	59.6	67.0	53.0	85.0	35.0	13.86			
MONTH.	Monthly Mean Temperature.	Mean of Warmest Day.	Mean of Coldest Day.	Highest Temperature.	Lowest Temperature.	Rainfall, Inches.	Clear Days.	Fair Days.	Cloudy Days.
1887—January	54.7	63.5	49.0	79.0	37.0	.31	—	—	—
February	50.4	61.1	45.3	79.2	37.0	8.64	—	—	—
March	57.0	64.8	52.0	82.6	43.0	.13	—	—	—
April	58.4	66.8	51.0	80.5	41.0	1.43	—	—	—
May	60.0	67.0	53.3	86.0	43.5	.33	—	—	—
June	63.7	79.0	59.0	95.0	44.0	.03	—	—	—
July	64.6	71.3	60.9	85.5	40.0	.00	29	0	2
August	64.8	69.7	62.0	81.0	53.0	.00	28	2	1
September	66.0	70.5	61.5	81.2	51.0	.38	24	4	1
October	65.0	74.0	59.3	91.8	48.5	.31	24	3	3
November	58.9	65.3	47.5	84.6	39.5	1.10	24	2	4
December	52.8	59.6	49.0	74.2	38.0	4.43	26	1	4
Annual average	59.7	67.7	54.2	95.0	37.0	*17.09	†155	†12	†15

*Total for year.

†Total for six months.

The mean temperature of the whole year was 59.7°, while that of the three summer months was 64.4°, a difference of less than 5°. There were, during the year, 26 days on which the temperature rose above 80°, and of these only 6 were in the summer. On the warmest night of the year the

temperature fell to 65°, and there were but 14 nights in the whole year when it did not fall to 60° or below, and of these but 4 were in the summer.

Rain fell on 24 days, with a total rainfall of 17.09 inches, which is 0.72 above the average for the last twenty years. In the early part of the year no record was kept as to clearness. Of the 289 days observed, 214 were recorded as clear, 40 as fair, and 35 cloudy.

SANTA BARBARA, SANTA BARBARA COUNTY.

The following rainfall table of Santa Barbara was compiled by Mr. Hugh D. Vail, Meteorological Observer at that city. The table gives the total rainfall for each month, each year, and the total for each season, from January, 1868, to date; also the monthly, yearly, and seasonal averages:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year.	Season of	Total for Season
1868	3.97	2.00	1.08	2.44	0.72	0	0	0	0	0	1.25	4.26	15.72	1868-69	15.77
1869	3.26	2.12	4.22	0.46	0.20	0	0	0	0	0.30	0.65	0.57	11.78	1869-70	10.27
1870	0.25	5.87	0.83	0.99	0.74	0.07	0	0	0	1.04	0.27	1.41	11.47	1870-71	8.91
1871	0.86	2.92	0.02	2.02	0.37	0	0	0	0	0.09	1.83	6.56	14.67	1871-72	14.94
1872	2.53	1.81	0.18	1.80	0	0.14	0	0.02	0.05	0	0	4.34	10.87	1872-73	10.52
1873	0.58	5.48	0.05	0	0	0	0	0	0	0	0.27	5.25	11.64	1873-74	14.44
1874	4.54	3.17	0.78	0.28	0.14	0	0	0	0	1.91	1.30	0	12.12	1874-75	18.71
1875	14.84	0.18	0.38	0.10	0	0	0	0	0	0	6.53	0.31	22.34	1875-76	23.07
1876	7.56	5.67	2.73	0.27	0	0	0	0	0	0.32	0	0	16.55	1876-77	4.49
1877	2.72	0	0.82	0.18	0.45	0	0	0	0	0	1.32	3.12	8.61	1877-78	29.51
1878	7.17	11.73	2.47	3.34	0.29	0.07	0	0	0	0.35	0	5.16	30.58	1878-79	13.61
1879	5.24	0.71	0.34	1.60	0.21	0	0	0	0	0.41	1.62	4.57	14.70	1879-80	25.64
1880	1.30	10.86	1.15	5.73	0	0	0	0	0	0.25	0.28	9.73	29.30	1880-81	15.23
1881	2.83	0.30	1.25	0.59	0	0	0	0	0.44	1.47	0.33	0.95	8.16	1881-82	14.27
1882	1.13	2.38	5.74	1.63	0	0.20	0	0	0	0.37	0.77	0.10	12.32	1882-83	13.41
1883	2.18	2.92	3.64	0.29	2.79	0.35	0	0	0	1.32	0	2.76	16.25	1883-84	34.47
1884	6.33	9.68	9.77	2.60	0.39	1.62	0	0	0	1.02	0.79	6.62	38.82	1884-85	13.08
1885	1.23	0.07	0.35	3.00	0	0	0	0	0	0.19	9.84	2.47	17.15	1885-86	24.24
1886	5.12	1.19	2.03	3.40	0	0	0	0	0	0.39	0.87	0.86	13.86	1886-87	12.99
1887	0.31	8.64	0.13	1.43	0.33	0.03	0	0	0.38	0.31	1.10	4.43	17.09	-----	-----
Totals	73.95	77.70	37.96	32.15	6.63	2.47	0	0.02	0.87	9.74	29.02	63.48	344.00	-----	317.57
Averages	3.87	3.88	1.90	1.61	0.33	0.12	0	.001	0.04	0.49	1.45	3.17	16.70	-----	16.71

WEATHER FOR FEBRUARY, 1888, IN SANTA BARBARA.

The following are the highest and lowest temperatures, and the means of these for each day of the past month, as shown by self-registering thermometers:

DATE.	Max.	Min.	Mean.	DATE.	Max.	Min.	Mean.
1	61.5	50.0	55.7	16	57.0	52.0	54.5
2	59.5	42.0	50.8	17	60.0	51.0	55.5
3	59.6	41.0	50.3	18	62.2	44.0	53.1
4	56.5	41.5	49.0	19	60.0	43.0	51.5
5	66.6	40.0	53.3	20	69.5	42.5	56.0
6	66.0	43.0	54.5	21	67.0	45.5	56.2
7	66.0	41.5	53.7	22	72.0	43.0	57.5
8	62.5	42.0	52.3	23	67.2	46.0	56.6
9	57.5	43.0	50.8	24	61.0	49.0	55.0
10	59.5	43.0	51.2	25	57.8	49.0	53.4
11	61.0	47.0	54.0	26	61.6	49.0	55.3
12	65.2	48.0	56.6	27	59.2	49.0	54.1
13	60.0	49.0	54.5	28	59.0	51.0	55.0
14	60.6	49.0	54.8	29	59.0	44.0	51.5
15	62.0	48.5	55.3				
Monthly mean temp. ..					61.8	45.7	53.8

The mean temperature of the month was 53.85°, that of the warmest day, 57.5°, and of the coldest, 49°. Frost occurred on 3 nights. The highest temperature was 72°, on the twenty-second, and the lowest 40°, on the night of the fourth. The mean daily range was 16.2°, the least, 5°, on the sixteenth, and the greatest, 29°, on the twenty-second. There were 17 clear days in the month, 2 fair, and 10 cloudy or foggy ones. Rain fell on 4 days, and the rainfall for the month was 1.30 inches, and for the season, 17.69 inches. The average rainfall for twenty years in February, is 3.88 inches. The extremes are 11.73 inches in 1878, and none in 1877.

Average Precipitation in Santa Barbara County.

	January	February	March	April	May	June	July	August	September	October	November	December
Point Conception	2.10	3.10	2.48	1.46	0.09	0.16	none	none	none	0.18	0.39	1.81
Santa Barbara	3.17	4.18	2.49	1.56	0.37	0.15	0.01	none	0.01	0.45	1.13	4.69

SAN BERNARDINO COUNTY.

The climate of the county is as varied as are its physical features. The valley, owing to its inland position, possesses a climate differing from the seaboard towns, the dryness of its atmosphere constituting a marked difference. The spring and fall months are the most enjoyable, the weather then being all perfection. The temperature is steady, the nights cool, the days cloudless, and a pleasant sea breeze which reaches the valley every day from eleven to two o'clock and continuing until sunset, greatly modifies the heat, even of midsummer. In midsummer the days are hotter than in the coast towns, the thermometer ranging from 95° to 105°. The heat, however, is dry and not at all enervating or oppressive, and work can be carried on in the sun with more pleasure than when the thermometer records 75° to 80° in the East. Sunstroke is a thing utterly unknown in this valley. The regular sea breeze which reaches the valley daily, while it does not affect the thermometer, greatly modifies the heat which would otherwise be oppressive. The nights are always cool, and a pair of blankets will be found desirable almost every night through the summer months.

One of the great advantages enjoyed by San Bernardino is its abundance of water. Almost surrounded by mountains, numerous streams pour into it from all directions, while artesian water can be obtained almost anywhere in the valley by sinking from 30 to 300 feet. There are now several hundred flowing wells in the valley, affording pure water for the household, as well as for purposes of irrigation. Owing to this abundance of water the farmers have less dread of a dry season than is experienced in other parts of the south, while a failure of crops is a thing wholly unknown.

In resources, this county can boast as great variety as it can of climate and physical features. The principal ones are agricultural products, semi-tropical and deciduous fruits, lumber, wool, cattle, gold, silver, lead, and honey. The staple cereal is barley, which is a winter crop, and in ordinarily good seasons yields very heavily. After the barley is harvested, on damp or irrigable lands, it is succeeded by a crop of corn; alfalfa, which is the principal hay crop, yields very heavily, and is cut from four to seven times in the season. .

RAINFALL AT SAN BERNARDINO, SAN BERNARDINO COUNTY.

The rainfall at San Bernardino was furnished by Mr. Sidney P. Waite, of the San Bernardino Water Company, and extends from July, 1870, to March 1, 1887, and is as follows:

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total for Year.	Season of	Total for Season.
1870							none	none	.02	.09	3.11	.89			
1871	6.91	2.21	.19	.34	.11	.07	none	.04	.13	.60	.88	3.91	15.39	1870-71	13.94
1872	none	2.20	.37	.79	.06	none	none	.18	.04	none	1.17	4.40	9.21	1871-72	8.98
1873	6.50	1.25	.51	.84	.21	none	none	1.06	.02	.01	.74	5.73	16.87	1872-73	15.10
1874	5.51	8.76	1.08	.48	.42	none	none	none	.06	1.82	1.88	2.20	23.21	1873-74	23.81
1875	7.20	0.15	0.22	.97	.05	none	none	none	none	none	7.50	.02	15.21	1874-75	13.65
1876	6.55	1.32	3.41	.44	.03	.03	none	none	none	.20	.40	none	12.98	1875-76	19.90
1877	3.50	4.03	.83	.26	.30	none	none	none	none	.86	.50	3.95	14.23	1876-77	9.52
1878	3.33	6.68	2.57	1.71	.66	.07	.07	none	.02	.14	.05	4.70	20.00	1877-78	20.33
1879	3.59	1.00	.50	1.20	.24	.03	.11	.02	.01	.94	3.40	6.50	17.54	1878-79	11.54
1880	1.56	1.33	1.45	5.00	.04	none	none	none	none	.14	.67	8.80	18.99	1879-80	20.36
1881	1.40	.36	1.66	.46	.01	none	none	none	none	.80	.27	.50	5.46	1880-81	13.50
1882	*1.11	2.65	3.30	2.91	none	none	none	none	none	.10	.15	.45	9.67	1881-82	11.54
1883	1.60	1.10	2.82	2.95	none	none	.19	none	.53	.85	.09	2.63	12.76	1882-83	9.17
1884	1.63	12.20	9.95	5.68	3.17	.59	none	none	none	none	.11	3.75	37.08	1883-84	37.51
1885	2.79	.11	.28	1.89	1.69	.19	none	none	none	.39	4.36	1.20	12.90	1884-85	10.81
1886	6.44	2.52	4.18	2.36	.32	.16	none	none	none	none	.11	.61	16.70	1885-86	21.93
1887	.39	6.44												1886-87	†7.55
Totals	60.01	54.91	33.32	27.38	7.31	1.14	.37	1.30	.83	6.94	25.39	50.24	258.20		261.69
M'thly average	3.530	3.230	2.083	1.711	.457	.071	.022	.076	.049	.408	1.494	2.955	15.185		16.349

* Twelve inches snow January 12, 1882.

† Total for season of 1886-87, from July to March 1, 1887.

SUMMARY OF THE WEATHER AT RIVERSIDE, SAN BERNARDINO COUNTY, CALIFORNIA, FOR THE YEAR 1887.

MONTH.	Mean Temperature.	Highest Temperature.	Lowest Temperature.	Rainfall, in Inches.	Prevailing Wind Direction.
January	51.4	78.0	25.5	.13	N.
February	49.7	84.0	29.0	2.85	S.W.
March	69.0	88.0	39.0	.02	S.W.
April	64.1	89.5	43.0	1.71	S.W.
May	67.4	90.5	44.0	.17	S.W.
June	71.3	99.0	47.0	.00	S.W.
July	76.2	105.0	50.0	.00	S.W.
August	73.6	99.5	51.0	.00	S.W.
September	73.3	98.0	48.0	.00	S.W.
October	66.5	94.0	42.0	.86	S.W.
November	57.9	85.0	33.0	.92	S.W.
December	50.1	72.0	29.5	1.50	S.W.
Yearly average	63.5	105.0	25.5	8.16	S.W.

TABLE SHOWING AVERAGE TEMPERATURE AND RAINFALL FOR SAN BERNARDINO COUNTY.

STATIONS.	Elevation—Feet	Average Winter Temperature	Average Spring Temperature	Average Summer Temperature	Average Autumn Temperature	Average Annual Temperature	Highest Temperature	Lowest Temperature	Average Seasonal Rainfall—Inches
Riverside		50.4	64.1	73.7	65.7	63.5	105	25	8.16
Colton	965	52.0	62.7	78.3	65.3	64.6	116	20	9.84
Daggett	2,010	47.9	57.8	84.3	71.0	65.2	104	20	3.98
Fenner	2,095	51.2	70.7	88.0	70.6	70.1	112	22	7.47
Needles	485	51.7	69.1	87.7	72.0	70.1	114	26	6.27
King's Station	4,300	41.0	49.8	65.3	54.8	52.7	99	12	22.49

Average Precipitation in San Bernardino County.

	January	February	March	April	May	June	July	August	September	October	November	December
Bear Valley	6.30	34.31	25.14	14.90	3.11	1.51	none	none	none	1.50	none	6.50
Camp Cady	0.27	0.50	0.56	0.25	0.08	none	none	0.15	none	0.05	0.40	0.15
Colton	1.37	2.74	1.51	1.57	0.76	0.11	none	none	none	0.27	0.33	1.10
Daggett	0.48	1.45	1.17	0.10	0.49	none	none	none	none	none	none	0.29
Fenner	0.15	1.32	2.25	0.15	1.09	0.05	none	none	0.06	none	none	2.40
Needles	none	1.90	2.08	0.10	0.75	none	none	none	0.12	none	none	1.32
Redlands	1.47	11.32	10.95	5.64	4.07	0.70	none	none	0.50	none	1.33	1.87
King's Station	4.65	4.69	3.44	2.82	0.79	0.19	0.16	0.04	0.07	0.53	0.70	3.33
Riverside	2.55	2.21	1.24	0.93	0.22	0.04	none	0.75	0.27	0.13	0.75	0.92

SUMMIT COUNTIES.

LASSEN COUNTY.

This county is a succession of mountain ranges and valleys, and although in the central and eastern parts the hills seem to have been placed regardless of direction or order, the ranges have a general trend to the southeast and northwest. A ridge, having an altitude of 8,200 feet and called Diamond Mountain, makes the dividing line between Lassen and Plumas Counties. Diamond Mountain forms the southern side of Honey Lake Valley, which extends southeast and northwest, a distance of 45 miles, and about 15 miles in width. In the extreme northwest corner of the county, and extending into Modoc County, lies Big Valley, a large stretch of agricultural land, comprising in Lassen County, about 75,000 acres. This valley is watered by Pitt River, Ash Creek, and several smaller streams, and has something less than 1,000 inhabitants. Long Valley lies in the extreme southeast of the county, contains for its size but little agricultural land, but is remarkable for its singular conformation. Its south side is formed by a high, and very heavily timbered ridge, while the rise

in the north is gradual, and the country dry, timberless, and open. The valley is about 40 miles in length, but very narrow, having an average breadth of 1, 2, or 3 miles. Between Big and Honey Lake Valleys, lie Grasshopper, Willow Creek, Eagle Lake, and Horse Lake Valleys, separated from each other and from the main valleys by intervening ridges of various heights. Each of the last named valleys are very small, containing but few ranches, and mostly occupied by the bodies of water from which they derive their names. In the eastern central part of Lassen lies the Madeline Plains, a large, level tract of land, at an altitude of 5,300 feet. This plain appears to have been at one time the bed of a lake, but in some of the remarkable changes of nature, to have been transformed into its present condition. It is about 35 by 15 miles, and is covered with a dense growth of sagebrush. The only natural sources of irrigation appear to be the springs about its edge, where there are excellent stock ranches, the surrounding hills covered with bunch-grass affording abundant feed. Any kind of grain will grow upon these plains if irrigated.

SIERRA COUNTY.

The chief industry of the county has been mining. Millions of dollars have been taken from the hills and mountains in Sierra County, and there are yet mines that yield well. As late as 1880 the annual gold product of Sierra County was in round figures about \$1,000,000.

The county seat is Downieville, which was located as early as 1849, and whose early history forms a very important part of the annals of California. It was at one time the center of trade for the richest gravel mines. It is situated on both sides of the Yuba River, and lies in a deep cañon, picturesquely inclosed on all sides by mountains fully 2,000 feet high. The population is about 675. It is reached by stage from Marysville, on the Oregon Branch of the Central Pacific Railroad, distant 67 miles, or from Nevada City, in Nevada County, the terminus of the Nevada Central Railroad, distant 40 miles. There is a bank, good business houses, lodges, churches, and fraternal societies.

Sierra City is 12 miles east of Downieville and has a population of about 425. It is the center of an important mining section. Many rich gravel mines are in this vicinity, which, with the several lumber camps and saw-mills, give a lively appearance.

Sierra Valley, an agricultural town, is 18 miles northeast of Sierra City, and has a population of 400.

Forest City is 7 miles south of Downieville, and 50 miles by stage from Marysville, and has a population of 625. Altitude, 4,500 feet. The Bald Mountain and Bald Mountain Extension Mines, located here, have yielded over \$2,000,000.

ALPINE COUNTY.

The county is a succession of mountain ranges, with high and precipitous peaks, interspersed with numerous lakes, rivers, creeks, and beautiful valleys. Silver Mountain is the highest peak in the county, having an altitude of 10,000 feet above the level of the sea, and is located near the western boundary of the county, and about eighteen miles south of Woodford's. The town of Silver Mountain is situated at or near the base of this mountain, from which it derives its name. Round Top is another one of Alpine's towering peaks: it is 10,600 feet high, on the summit of which is located one of the Pacific Coast Signal Service Stations, which has been under the supervision of Professor Davidson during the past summer. There are numerous small lakes throughout the county. The waters of those lakes are clear, cold, and the most beautiful of all waters. Of these are Blue Lakes and Caples Lakes, in the western part of the county, near the Amador and Hope Valley wagon road, which are visited by many people during the summer season. The Carson River heads in the southern part of the county, and flows from south to north through the county. It is fed by numerous streams, viz.: The East Fork of the East Carson River, West Fork of Carson River, Wool Creek, Silver Creek, Monitor Creek, Smith's Creek, Mogul Creek, and Indian Creek. Among these mountains are numerous valleys. The largest and most noted are Diamond, Hermit, Pleasant, Hope, Faith, and Charity Valleys.

Diamond Valley lies in the northeastern part of the county, and contains some very rich, productive ranches, producing wheat, barley, hay, oats, and potatoes, and as there is no great amount of these cereals and vegetables raised in the county, the farmers of Diamond Valley find a ready home market for their produce, at good remunerative prices. The three sister valleys of the county are Hope, Faith, and Charity—valleys which are located in the northwestern part of the county, at an altitude of about 7,500 feet above sea level.

These valleys are inhabited only during the summer months, and then by stock raisers and dairymen. The dairy interest in these three valleys is of considerable importance, and more than 30,000 pounds of butter of an excellent quality is produced annually, which is readily marketed in the cities of Carson, Gold Hill, Virginia, and other towns of Nevada, which are much better markets for the mountain dairymen than the cities of San Francisco or Sacramento.

There are many other small valleys throughout different parts of the county, where sheep and cattle are grazed during the summer season. The nutritious bunch grass which grows so luxuriantly in those mountainous regions, is of an excellent quality, and stock fattens very rapidly upon it. The larger amount of the stock which are grazed in Alpine County during the summer months, are migratory, driven here from adjacent counties.

MONO COUNTY.

The western portion of the county lies among the Sierra Nevada Mountains, the heights being clad in snow, and the slopes of the range covered with forest trees. Among the highest peaks in the county are Mount Dana, 13,627 feet high; Mount Lyell, 13,217 feet high; and Castle Peak, 13,000 feet high. Among the mountains in the western part, particularly in the vicinity of Bridgeport, to the north, are a large number of valleys, which constitute the agricultural or cultivated lands of the county.

The eastern portion of the county, which is usually spoken of as a strange, mysterious country, is of a desert-like, volcanic character, abounding in salt pools, alkali, and volcanic table lands, the characteristics of this portion of the county being significantly indicated by some of the local names, such as Hot Springs, Geysers, Sulphur Springs, Black Lake, Soda Pond, Volcanoes, Obsidian Mountain, Deep Cañon, Volcanic Table-land, Red Crater, Adobe Meadows, and Oasis.

Mono Lake, situated in the center of the county, is about 15 miles long by 10 miles wide, its waters being a somewhat unusual compound, various chemical substances being found in solution in them. This lake has the appearance of having once been the scene of volcanic action.

INYO COUNTY.

The agricultural portion of Inyo lies along the foot of the great range, and is in the main comprised in Owens Valley, through which courses Owens River. The valley is about 95 miles in length, with a belt of arable land, varying in width from 2 to 8 miles, and lies at an altitude of about 4,000 to 5,000 feet. It contains about 175,000 acres of arable land, rated from fair to good. About 30,000 acres are under claim, about one third of this amount, say 10,000 acres, having been appropriated during the past year. Something near 12,000 acres are under cultivation and irrigated mostly from the numerous brooks and creeks that come down from the snowy Sierras.

Agriculturists generally are turning their attention to raising of fine stock, for which purpose a number of thoroughbred animals, both horses and cattle, have been added to those already on hand. The country is well adapted to stock.

In examining the statistics at hand, we find that in 1884 there were sown in the county of Inyo, 965 acres to oats; 1,312 acres to corn; 1,180 acres to wheat; and 1,364 acres to barley; making a total of 4,821 acres of land devoted to the cereals, and that area has been considerably enlarged in the two subsequent years.

Average Precipitation in Inyo County.

	January	February	March	April	May	June	July	August	September	October	November	December
Camp Independence.....	1.22	.56	.52	.21	.27	.04	.10	.17	.07	.27	.21	2.27

WASHINGTON TERRITORY, OREGON, CALIFORNIA, NEVADA, UTAH, AND ARIZONA.

The following temperature and rainfall figures for January, 1888, by Mr. H. E. Wilkinson, Observer in the office of the officer in charge of the Pacific Coast Division, Signal Service Corps. Mr. Wilkinson has also given the lowest temperature ever recorded, along with the date, since observations began, and it will be observed, in most cases, that the polar wave which passed over the Pacific Coast during January, was colder than ever before recorded. The table is both interesting and instructive:

STATIONS.	Monthly Mean Temperature.	Highest Temperature and Date.	Lowest Temperature, and Date.	Lowest Temperature Previously Recorded, and Date.	Rain-fall.
Tatoosh Island, W. T.	36.4	55.4, 30th	14.0, 13th	-----	12.10
Port Angelos, Wash. Ter. . .	31.7	54.2, 25th	06.3, 14th	-----	5.43
Olympia, Wash. Ter.	32.5	56.0, 30th	-01.8, 15th	02.0 February, 1884	11.38
Fort Canby, Wash. Ter.	35.5	55.3, 31st	11.0, 15th	16.0 February, 1884	11.39
Spokane Falls, Wash. Ter. .	15.5	51.7, 27th	-30.5, 16th	-27.7 January, 1883	3.96
Walla Walla, Wash. Ter. . .	21.1	65.4, 31st	-17.1, 16th	-----	2.21
Portland, Oregon	30.0	62.0, 25th	-02.0, 15th	03.0 December, 1875	8.50
Roseburg, Oregon	35.1	71.1, 26th	-06.0, 16th	03.3 February, 1884	6.62
Ashland, Oregon	32.7	62.0, 26th	-03.0, 14th	12.0 February, 1887	3.81
Linkville, Oregon	20.1	45.6, 31st	-23.9, 15th	-04.0 February, 1884	2.77
Fort Klamath, Oregon	16.6	46.0, 26th	-39.0, 15th	-34.0 February, 1884	5.71
Lakeview, Oregon	21.9	50.0, 27th	-24.0, 15th	-----	2.85
Eureka, California	44.6	76.9, 26th	20.3, 14th	-----	12.95
Fort Bidwell, California . . .	21.8	51.2, 30th	-25.5, 14th	-----	3.28
Red Bluff, California	40.9	59.5, 30th	17.5, 14th	19.0 January, 1883	4.08
Sacramento, California	42.8	63.0, 25th	19.0, 14-15	19.0 January, 1854	4.81
San Francisco, California . . .	46.3	62.8, 28th	28.7, 15th	33.1 .. February 5, 1887	6.81
Fresno, California	44.1	68.5, 26th	19.6, 16th	-----	1.75
Keeler, California	35.3	58.0, 31st	11.8, 15th	-----	0.70
Los Angeles, California	50.0	71.0, 26th	30.9, 10th	28.0 February, 1883	6.04
San Diego, California	51.6	64.5, 21st	35.0, 8th	32.0 Dec. 1879, Jan. '80	1.96
Yuma, Arizona	51.6	78.6, 28th	20.7, 11th	22.5 January, 1883	0.18
Fort Apache, Arizona	34.6	64.7, 26th	06.7, 13th	-09.0 ... February, 1880	1.42
Prescott, Arizona	27.5	56.0, 28th	-12.0, 8th	-18.0 December, 1879	1.30
Winnemucca, Nevada	18.7	49.6, 25th	-28.0, 15th	-23.0 January, 1883	1.40
Carson, Nevada	27.6	57.8, 30th	-09.6, 16th	-----	1.51
Salt Lake City, Utah	23.5	52.8, 30th	-16.7, 15th	-20.0 January, 1883	1.52
Helena, Montana	5.3	56.5, 30th	-41.0, 15th	-40.0 December, 1880	0.79
Boise City, Idaho	17.7	61.2, 28th	-27.8, 16th	-27.0 January, 1883	1.54

MONTHLY TEMPERATURE AT THE SOUTHERN PACIFIC STATIONS IN CALIFORNIA, NEVADA, UTAH, ARIZONA, NEW MEXICO, AND TEXAS.

The mean temperature as determined from observations taken at 7 A. M., 2 and 9 P. M., by the Southern Pacific Company, during the year 1887, and compiled from their records by Sergeant Nelson Gorum, in charge of the local Signal Office at San Francisco. (Means—3, 7.2, and 9.)

STATIONS.	January	February	March	April	May	June	July	August	September	October	November	December	Annual Means	*Highest Ob- served	*Lowest Ob- served	Lowest, Jan- uary, 1888
Alhambra, California	50.7	47.1	50.5	50.5	62.6	68.2	68.8	67.1	69.5	65.6	56.1	50.7	60.0	96	35	27
Anaheim, California	51.0	53.3	58.9	61.0	63.4	65.8	72.3	71.2	71.7	70.6	61.4	53.8	63.1	98	34	34
Antioch, California	49.8	47.1	50.1	62.3	68.2	73.6	74.8	73.6	73.3	70.4	57.0	49.2	63.0	101	29	24
Aptos, California	49.1	47.0	55.5	55.7	58.9	63.1	61.0	60.1	60.1	59.6	51.5	49.2	56.2	85	28	19
Atholene, California	50.5	45.8	58.9	62.1	71.1	78.7	83.2	79.4	75.3	67.1	54.9	45.5	64.4	104	28	20
Auburn, California	44.9	39.8	51.5	55.4	63.1	71.3	76.0	72.5	71.0	67.1	53.4	44.8	59.5	106	24	12
Battle Mountain, Nevada	33.9	30.6	44.7	46.2	56.9	61.7	76.2	69.6		49.8	38.4	28.2		98	0	-35
Beaumont, California												47.3				24
Benson, Arizona Territory	45.5	49.5	60.2	61.2	75.6	83.1	82.8	81.5	78.6	61.7	53.6	40.0	61.9	105	11	23
Beowawe, Nevada	34.2	32.2	49.4	48.3	59.8	68.8	76.6	72.5	63.2	50.1	35.3	21.8	51.0	96	-15	-37
Bishop Creek, California	44.7	41.5	62.5	63.9	72.1	82.6	87.6	82.0	76.9	61.9	50.0	44.3	64.4	102	12	3
Blue Creek, Utah	31.2	33.7	47.1	53.0	72.1	78.9	85.0	79.6	67.2	53.5	41.3	28.8	56.2	107	10	-22
Boca, California	27.4	21.1	34.3	42.9	51.8	56.1	64.9	63.5	35.9	49.6	33.5			96	-26	-39
Borden, California	47.2	46.9	59.0	61.8	72.9	79.2	81.4	79.2	76.5	68.3	55.3	46.6	64.5	114	25	17
Brentwood, California	49.2	46.7	60.8	64.3	67.8	77.9	80.3	79.6	75.9	63.5	52.8	47.2	63.8	107	28	19
Brighton, California	50.9	47.6	59.5	62.3	68.8	77.9	79.9	76.2	76.8	70.4	57.7	49.5	61.8	110	28	22
Brown S., Nevada	37.9	33.4	51.7	51.6	65.0	71.1	82.7	76.7	66.5	55.7	42.0			105	8	-25
Byron, California	48.1	46.8	62.5	65.3	74.5	83.7	84.8	76.5	74.5		54.5	48.3		112	24	22
Caliente, California	50.4	47.5	59.0	58.7	68.1	77.6	86.0	83.1	74.3	68.2	56.6	46.8	64.7	104	30	
Calistoga, California	47.5	43.3	55.7	59.5	63.6	70.2	70.9	65.8	67.4	65.5	51.8	49.4	59.2	109	17	22
Carlin, Nevada	31.4	29.8	44.8	46.1	59.0	66.8	74.3	72.0	60.0	45.7	33.4	20.1	48.9	100	18	-65
Casa Grande, Arizona Territory	52.0	50.6	69.5	71.8	80.5	92.2	93.4	93.4	88.0	74.7	63.6	49.0	73.7	112	22	30
Chico, California	50.5	45.0	60.0	65.0	79.7	80.6	88.3	80.0	77.7	70.5	55.2	48.5	66.2	114	28	18
Chualar, California																
Cisco, California	29.5	21.4	36.4	38.6	47.9	55.3	60.1	57.9	55.8	51.9	41.3	32.1	41.3	85	8	0
Colfax, California	45.0	39.8	54.4	62.3	69.5	75.5	75.5	71.7	69.0	65.9	53.9	42.4	58.4	104	21	16
Colton, California	56.8	51.1	61.3	60.3	68.4	74.8	78.5	76.9	73.8	65.6	57.0	49.3	64.7	113	30	
Corinne, Utah	31.6	31.4	46.1	50.8	65.8	73.9	81.3	77.3	67.4	51.0	37.2	25.8	53.3	102	0	-25
Corning, California	48.7	41.0	55.7	59.8	68.7	78.3	80.7	75.7	70.1	54.0	48.2	61.2	61.2	112	29	25
Davis, California	50.2	47.6	61.1	62.1	68.7	75.4	74.4	74.1	70.6	69.0	55.5	49.0	63.1	110	26	19
Delano, California	46.4	48.5	58.4	64.3	74.7	82.7	91.0	88.2	85.0	72.0	64.9	50.7	69.1	112	26	24
Delta, California	41.2	34.9	50.8	52.6	61.1	70.1	73.9		72.7	61.0	47.7	39.4		107	21	10
Deming, New Mexico	47.4	51.3	66.4	66.4	71.4	81.4	88.1	82.8	75.2	65.3	54.8	39.6		110	12	25

Dunnigan, California.....	51.0	46.1	63.6	64.6	71.4	79.7	79.3	77.8	73.8	67.9	56.8	48.8	65.1	111	31	20
Elko, Nevada.....	30.0	26.5	41.9	46.5	60.0	71.5	80.6	71.6	39.6	41.7	26.7	21.5	49.3	107	14	40
Elmira, California.....	53.8	47.5	59.9	63.2	69.6	73.0	71.8	71.4	72.8	68.6	55.4	49.8	62.8	112	30	24
El Paso, Texas.....	40.5	50.4	63.6	68.9	84.4	91.3	89.7	86.3	85.4	63.3	54.2	40.3	68.3	108	5	---
Emigrant Gap, California.....	38.6	30.8	43.8	45.9	53.8	61.5	68.0	66.9	61.9	57.9	47.1	38.4	51.2	90	16	8
Farmington, California.....	45.9	46.1	61.8	60.5	67.6	74.6	77.8	75.4	74.1	69.2	61.3	45.8	63.4	111	28	20
Fresno, California.....	47.8	49.3	62.7	63.6	72.4	79.8	87.5	82.6	75.5	70.2	60.9	48.8	66.8	109	31	23
Galt, California.....	50.5	45.4	60.5	58.6	75.4	81.7	79.8	77.9	76.4	63.4	60.8	52.1	65.2	105	28	20
Gilroy, California.....	47.7	46.8	59.5	56.9	62.4	66.6	65.0	63.7	67.9	64.1	52.7	46.3	58.3	103	22	20
Golconda, Nevada.....	43.5	37.2	52.1	53.5	66.9	71.8	81.4	78.7	67.3	58.9	49.3	39.7	58.4	106	10	25
Goshen, California.....	46.1	47.1	63.7	64.3	73.2	85.6	88.7	85.3	82.4	71.3	57.5	44.4	67.5	111	24	16
Halleck, Nevada.....	32.4	24.3	47.2	50.8	63.5	69.9	76.2	73.3	61.2	46.2	25.3	15.5	49.3	102	27	50
Hawthorne, Nevada.....	39.9	38.7	50.8	51.8	60.9	67.1	78.6	73.3	61.6	54.1	46.6	36.1	55.0	98	18	8
Hollister, California.....	51.9	49.0	59.8	59.4	65.5	68.0	64.9	62.4	65.0	62.1	56.1	32.2	59.7	105	31	21
Hornbrook, California.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hot Springs, Nevada.....	35.6	29.2	43.9	49.3	70.2	68.1	75.3	73.8	59.8	47.4	40.3	38.2	52.0	98	18	12
Humboldt, California.....	36.3	31.4	50.5	55.1	59.4	63.2	72.6	71.2	62.3	52.3	41.5	27.2	51.9	98	31	24
Indio, California.....	54.1	59.5	72.8	79.4	90.0	95.7	94.7	87.9	74.9	62.9	54.1	75.2	122	122	27	22
Ione, California.....	44.8	44.9	54.9	57.6	63.7	73.4	76.3	75.6	71.9	61.1	50.6	45.1	60.0	109	21	17
King's City, California.....	49.7	44.6	61.4	58.9	65.6	66.4	69.4	64.8	62.4	54.1	44.4	39.9	59.9	109	21	15
Keeler, California.....	43.6	40.1	59.0	59.2	68.0	76.3	82.5	80.7	73.3	63.6	51.8	42.7	61.7	99	23	12
Keene, California.....	45.6	41.5	52.0	50.7	60.5	67.1	75.5	64.2	64.7	62.5	55.0	43.4	56.9	100	24	16
Kelton, Utah.....	34.4	31.0	44.0	49.3	63.6	72.9	77.7	71.5	60.9	49.2	33.5	24.0	51.0	104	3	30
Kingsburg, California.....	44.3	45.4	59.6	61.1	69.5	77.4	84.5	80.7	75.7	63.7	56.8	46.3	59.6	105	28	20
Knight's Landing, California.....	54.8	45.8	48.3	53.1	61.3	69.1	73.7	72.8	67.5	65.7	58.8	43.0	63.2	108	24	20
Lathrop, California.....	46.4	44.6	56.9	57.9	65.7	72.8	74.9	71.9	70.3	63.2	52.1	46.6	60.4	107	20	23
Lemoore, California.....	46.9	49.3	62.9	61.0	69.6	75.9	84.0	79.8	73.7	70.9	55.4	45.0	64.7	110	21	18
Livermore, California.....	52.1	45.7	57.3	56.1	60.5	68.9	66.3	66.4	67.1	66.4	57.3	52.5	59.8	106	28	20
Livingston, California.....	53.6	52.9	66.1	65.5	73.9	81.2	84.8	79.1	79.1	70.2	60.9	49.6	68.1	108	28	21
Lordsburg, New Mexico.....	41.4	43.2	53.5	62.9	73.0	84.0	83.9	80.9	74.8	61.3	50.4	37.6	62.2	99	2	20
Los Angeles, California.....	55.1	52.3	59.4	61.1	65.2	69.7	71.8	69.4	69.4	66.3	58.8	52.7	62.6	97	32	28
Mammoth Tank, California.....	57.7	58.0	78.4	80.4	91.2	100.2	100.5	90.4	88.4	80.4	65.8	51.0	78.5	128	30	27
Maricopa, Arizona Territory.....	51.2	55.5	69.1	73.2	88.5	90.2	93.0	73.3	82.9	73.5	69.2	53.9	72.6	116	22	46
Martinez, California.....	44.6	43.6	53.6	57.1	60.8	67.5	66.7	61.3	62.9	62.4	54.2	50.3	62.0	94	28	20
Marysville, California.....	48.5	42.5	54.9	57.9	71.4	75.6	74.1	71.3	69.4	67.1	58.6	53.3	62.0	105	27	20
Menlo Park, California.....	46.4	47.1	55.8	55.4	61.0	66.5	64.2	63.6	64.6	60.8	53.6	48.3	57.3	103	26	20
Merced, California.....	49.0	46.8	62.9	62.1	71.7	78.1	82.5	68.5	74.6	72.0	58.8	49.4	63.5	108	28	19
Modesto, California.....	46.6	46.1	59.7	63.8	72.5	78.1	79.3	78.0	74.2	66.8	53.0	44.9	63.5	104	23	16
Mojave, California.....	46.5	42.3	65.7	67.4	77.9	78.8	84.9	82.9	77.6	71.5	60.0	50.1	57.0	104	23	16
Monterey (Railroad Station), California.....	49.4	48.3	54.0	53.3	58.4	62.0	61.6	62.1	62.6	61.4	57.5	53.3	57.0	85	26	20
Napa, California.....	48.8	45.2	53.5	57.9	62.0	72.7	68.1	65.2	64.3	61.6	51.5	48.6	58.3	101	20	21
Newhall, California.....	49.0	46.4	46.7	58.6	71.1	75.6	72.2	72.4	65.6	63.6	55.8	46.5	61.1	106	25	14
Niles, California.....	46.6	46.8	57.0	56.8	63.4	64.5	63.2	60.3	63.6	64.6	62.7	---	---	104	32	---

* Highest and lowest temperature occurring at time of observation, and must not be confounded with the actual highest and lowest temperature; there being no self-registering instrument used, the actual maximum and minimum temperature could not be obtained.

MONTHLY TEMPERATURE AT THE SOUTHERN PACIFIC STATIONS—Continued.

STATIONS.	January	February	March	April	May	June	July	August	September	October	November	December	Annual Means	Highest Observed	Lowest Observed	Lowest, January, 1888	
Oakland, California	51.5	47.7	53.5	56.0	57.5	59.5	58.2	59.0	61.0	61.7	52.9	51.3	55.9	90	31	28	
Ogden, Utah	34.0	36.2	47.0	51.9	67.1	73.5	80.3	78.5	65.5	51.1	38.2	27.9	51.3	106	5	25	
Orland, California	53.4	45.3	59.4	59.6	69.2	77.8	84.9	81.2	77.4	71.9	61.0	50.5	66.0	108	30	22	
Orego, Nevada	22.3	20.3	35.7	40.1	55.5	71.3	74.7	72.9						88	6		
Paparo, California	51.5	48.1	56.1	51.9	58.6	61.9	60.2	58.6	61.1	61.6	53.8	51.0	56.5	90	22	20	
Palisade, Nevada	34.2	30.4	46.0	46.0	64.5	66.6	74.9	73.7	63.4	51.7	33.7	16.7	51.7	100	9	30	
Pantano, Arizona Territory	64.4	62.4	74.7	68.9		83.3	84.7	83.4	81.2	78.0	61.6	43.7		110	11		
Paso Robles, California	41.3	45.3	54.5	57.9	64.7	70.6	72.5	69.0	69.3	61.7	52.4	46.7	59.1	105	15	13	
Petaluma, California	51.9	49.1	57.5	57.8	65.5	71.7	69.9	66.0	66.0	66.0	51.7	52.5	60.4	102	28	18	
Pleasanton, California	51.6	47.9	57.8	59.5	61.4	69.3	70.4	68.3	68.3	65.1	53.8	51.3	60.6	105	22	22	
Promontory, Utah	28.6	26.8	41.2	43.4	57.7	69.2	77.7	74.4	63.8	54.8	34.0	22.9	49.0	103	17	36	
Red Bluff, California	50.0	43.8	59.7	62.4	72.5	79.6	88.0	83.8	78.4	74.0	57.0	50.3	66.6	115	29	16	
Redding, California	48.6	42.7	59.0	61.6	72.9	76.4	79.8	76.8	71.3	70.6	56.0	45.6	63.4	109	28	18	
Reno, Nevada	32.8	26.3	41.1	45.4	53.2	66.6	68.5	66.7	66.6	47.6	42.8	32.3	46.7	98	11	10	
Rocklin, California	49.6	47.4	56.3	59.6	66.3	72.1	73.6	73.0	72.5	67.1	53.4	46.6	61.7	107	29	20	
Sacramento, California	46.7	41.6	56.7	58.5	64.2	70.7	71.6	68.8	68.0	62.3	51.9	45.2	59.1	93	31	22	
Salinas, California	47.7	45.2	54.5	51.6	60.5	64.2	60.1	59.3	60.3	63.1	51.3	45.8	56.1	90	28	21	
San Ardo, California	48.0	46.7	56.8	57.7	63.7	67.7	68.2	68.4	67.4	66.1	52.8	46.1	58.9	100	26	20	
San Fernando, California	57.1	54.7	64.9	70.6	74.9	77.1	78.9	80.4		70.0	67.1	51.3		105	30		
San Geronimo, California	48.8	45.2	58.6	57.5	61.2	72.8	77.9	77.2		63.1	40.7			108	32		
San Jose, California	50.3	48.2	54.8	54.3	58.6	63.9	61.8	63.3	64.7	62.5	51.6	50.5	57.5	104	30	22	
San Mateo, California	50.3	47.3	57.1	57.2	60.6	64.9	63.6	64.3	64.3	61.4	51.2	50.1	57.7	100	32	26	
San Miguel, California	48.0	46.3	57.4	56.8	64.5	69.9	73.7	69.9	68.5	67.0	59.5	49.5	60.9	108	21	17	
San Simon, Arizona Territory	44.5	50.2	57.4	64.0	73.9	83.2	85.5	85.4	81.2	71.2	50.5	42.0	63.2	112	14	30	
Santa Cruz, California	52.2	49.7	58.2	58.2	59.7	63.9	61.9	62.3	63.1	64.1	55.7	53.0	58.6	91	32	24	
Santa Monica, California	50.6	48.7	53.2	55.1	61.1	65.1	66.9	65.8	63.3	67.1	59.3	50.0	60.0	110	34	39	
Sedna, California	45.2	47.1	60.0	66.3	73.0	79.4	84.9	81.8	75.7	68.6	57.3	45.1	65.4	107	27	22	
Soledad, California	46.4	45.2	57.3	55.7	59.8	65.0	63.1	61.1	63.3	60.7	50.1	45.4	56.2	98	22	16	
Soquel, California	47.7	49.9	58.5	58.2	58.6	58.8	59.1	58.0	56.1	61.6	58.4	52.1	56.7	98	30	18	
South Side, California	48.6	43.2	57.1	55.6			77.0	75.7	73.9	67.7	59.1	50.7		102	26	26	
South Vallejo, California	53.1	49.4	60.3	62.7	65.3	68.3	67.3	66.5	67.6	65.3	49.9	61.3	61.3	103	32	24	
Spadra, California	51.2	51.6	61.8	59.4	66.9	69.5	70.7	77.6	68.0	61.2	58.3	50.8	72.8	104	30	27	
Stockton, California	48.5	45.9	58.0	59.5	64.0	68.2	70.3	68.4	68.5	63.9	53.1	46.7	59.6	102	30	24	
Suisun, California	51.7	48.5	59.9	61.1	64.7	68.8	68.2	69.4	71.6	67.6	56.8	48.3	61.4	109	28	27	
Summit, California	28.4	22.3	35.0	35.2	43.7	52.4	59.2	57.4	53.7	49.5	39.7	29.7	41.9	80	3	12	
Summer, California	46.4	50.1	63.1	65.3	75.7	85.2	91.7	85.8	80.8	68.5	57.3	47.6	68.1	111	28	20	

Tecoma, Nevada	31.0	27.4	48.0	50.9	66.6	73.5	82.8	79.5	67.6	53.0	36.6	25.8	53.6	105	5	33
Telamla, California	49.0	44.8	57.7	56.9	63.6	73.4	77.9	72.5	75.1	67.5	57.5	46.5	61.9	103	30	21
Tehachapi, California	37.4	33.3	49.7	49.9	56.2	63.9	73.7	72.0	64.4	56.8	46.5	39.0	53.5	94	10	2
Templeton, California	46.1	47.1	59.1	61.7	67.6	71.2	73.3	69.7	68.9	65.2	55.1	47.8	61.1	108	18	15
Terrace, Utah	31.0	28.7	43.8	47.1	63.4	78.5	86.1	79.4	71.3	67.1	43.8	23.1	56.0	104	8	39
Texas Hill, Arizona Territory	51.1	53.6	69.6	70.1	82.6	92.9	99.0	97.5	87.6	75.8	61.5	48.7	74.2	125	17	24
Toano, Nevada	27.7	26.5	46.4	44.4	61.0	68.0	77.3	75.0	60.3	48.5	31.9	25.7	50.1	96	2	34
Towles, California	46.5	34.5	52.2	50.6	55.3	62.1	68.1	65.3	61.8	63.3	54.6	46.1	55.3	100	14	8
Tracy, California	50.9	45.6	62.1	65.0	66.2	75.4	81.3	76.3	73.4	67.6	56.8	49.2	61.2	111	30	20
Travel, California	46.2	47.0	62.5	64.3	-----	83.0	84.6	99.1	74.1	-----	-----	46.5	-----	112	24	-----
Tropicco, California	29.1	24.0	38.2	38.5	50.0	57.5	62.9	60.0	52.1	46.4	37.8	25.1	43.5	88	10	36
Truckee, California	52.1	52.1	67.1	70.1	87.9	91.1	90.9	89.0	86.2	81.4	67.1	54.6	74.1	108	30	48
Tucson, Arizona Territory	47.1	48.1	58.8	64.4	69.3	79.1	81.8	89.8	78.6	71.6	58.1	43.3	65.3	102	27	18
Tulare, California	51.7	52.6	61.7	66.4	73.8	77.5	80.0	73.5	74.4	63.2	55.8	48.1	65.4	112	23	21
Turlock, California	38.1	32.4	47.5	51.4	61.0	71.8	79.2	75.4	65.0	54.4	44.6	35.0	55.0	102	4	26
Wadsworth, Nevada	33.6	30.2	40.1	48.0	64.6	68.0	72.7	69.0	59.6	44.1	15.9	3.0	43.0	93	22	44
Wells, Nevada	47.2	47.2	56.6	60.0	67.6	81.9	82.1	79.0	73.4	63.8	53.1	37.7	62.5	103	9	22
Wilcox, Arizona Territory	48.6	44.4	59.9	63.9	74.0	78.9	83.1	81.2	75.4	72.7	59.4	51.5	66.1	109	26	19
Williams, California	50.0	45.7	60.2	64.7	73.1	80.0	86.3	87.0	78.4	71.7	56.0	46.3	66.6	109	27	20
Willows, California	37.3	32.0	48.3	51.7	56.3	67.4	77.4	73.5	59.5	55.1	40.9	29.7	52.4	99	5	24
Winnemucca, Nevada	49.2	47.6	60.8	62.0	70.0	81.6	82.8	78.6	77.1	78.1	68.1	51.9	67.3	106	30	18
Woodland, California	58.5	58.5	72.9	74.2	81.3	89.7	99.5	95.4	88.7	78.5	66.1	53.8	76.4	114	34	34
Yuma, Arizona Territory	58.6	58.6	72.9	74.2	81.3	89.7	99.5	95.4	88.7	78.5	66.1	53.8	76.4	114	34	34

RAINFALL FOR THE YEAR 1887, FOR THE ENTIRE PACIFIC COAST AND NEVADA.

STATIONS.	COUNTY.	NAMES OF OBSERVERS.														
		January	February	March	April	May	June	July	August	September	October	November	December	Total	Normal or Average Precipitation	
<i>California.</i>																
Crescent City	Del Norte	17.91	9.41	7.24	5.65	4.64	1.20	.00	T.	.08	1.08	5.79	16.06	69.69	83.46	D. S. Sartwell.
Fort Jones	Siskiyou	5.28	4.95	1.07	2.63	.94	.36	.37	.17	.35	.09	1.75	5.88	23.84	24.10	J. Titcomb.
Fort Bidwell	Modoc	3.31	4.85	.97	1.96	1.47	.73	.18	.21	.05	.00	.38	2.40	16.51	20.16	Signal Service, T. J. Patterson.
Fort Gaston	Humboldt	9.43	9.96	2.63	4.04	3.19	1.62	.03	.04	.30	.39	3.40	8.36	43.43	55.68	Med. Dept., H. S. Polhemus, M. D.
Humboldt	Humboldt	7.32	7.11	2.32	5.44	2.31	2.09	.06	.07	.21	.00	2.63	5.20	35.18	33.59	L. H. Dept., W. C. Price.
Eureka	Humboldt	8.86	9.07	2.28	5.55	3.51	1.92	.00	.00	.00	.00	.50	2.23	27.82	53.23	Signal Service, Thomas Gibson.
Delta	Shasta	3.81	10.27	3.37	5.53	1.26	.82	.00	.00	.15	.00	1.00	3.00	23.45	31.26	S. P. R. R. Co.
Redding	Shasta	2.50	8.35	1.20	3.76	1.77	.26	T.	.00	.00	.00	1.52	2.32	13.60	25.61	Signal Service, Geo. D. Butcher.
Red Bluff	Tehama	.57	5.21	1.13	1.76	.45	.26	.00	.00	.00	.00	1.37	2.65	11.94	14.65	S. P. R. R. Co.
Tehama	Tehama	.33	4.29	1.46	2.86	.28	.18	.00	.00	.00	.00	1.05	2.53	15.44	19.31	S. P. R. R. Co.
Corning	Tehama	.45	6.81	1.38	2.31	.00	.96	.00	.00	.15	.00	1.21	2.62	17.99	20.62	S. P. R. R. Co.
Chico	Butte	.68	9.53	.98	2.81	.08	.18	T.	.01	.15	.00	.78	2.64	11.18	14.12	Hiram Arents.
Oroville	Butte	1.02	9.53	1.63	2.06	.00	.00	.00	.00	.00	.00	.95	2.17	10.00	11.48	S. P. R. R. Co.
Orland	Colusa	.33	3.74	1.16	2.78	.00	.00	.00	.00	T.	.00	.12	7.85	24.33	30.28	S. P. R. R. Co.
Willows	Colusa	.17	2.77	2.12	4.36	T.	T.	.00	.00	T.	.00	.60	1.90	11.97	10.64	J. D. McNary.
Fouts Springs	Colusa	2.00	7.88	1.77	1.91	.00	.00	.00	.00	.00	.00	.68	1.31	10.53	11.77	S. P. R. Co.
Colusa	Colusa	.42	5.97	1.77	1.91	.00	1.18	.00	.00	.00	.00	.68	1.31	10.53	11.77	E. S. Root, M. D.
Williams	Colusa	.35	4.35	1.30	1.36	.00	1.18	.00	.00	.04	.06	3.44	5.63	29.99	47.07	Chronicle W. S., L. A. Morgan.
Westport	Mendocino	4.28	5.48	3.56	4.87	.97	.33	.00	.00	.15	.00	3.30	4.12	27.53	49.83	L. H. Dept., Geo. P. Brennan.
Mendocino	Mendocino	3.60	7.02	3.28	5.09	.97	.21	.00	.00	.07	.00	2.31	3.68	19.89	27.11	S. P. R. R. Co.
Point Arena	Mendocino	3.67	5.01	1.63	3.20	.62	.21	.00	.00	.00	.00	1.07	3.70	14.70	16.32	S. P. R. R. Co.
Marysville	Yuba	.73	6.09	1.02	1.90	.10	.09	.00	.00	.00	.00	.00	4.80	23.70		S. P. R. R. Co.
Marysville	Yuba	.73	6.09	1.02	1.90	.10	.09	.00	.00	.00	.00	.03	5.74	21.07		S. P. R. R. Co.
Truckee	Nevada	3.43	12.50	.16	.00	2.04	.37	.40	T.	.00	.00	.00	1.38	6.65	37.54	M. Byrne, Jr.
Boca	Nevada	.80	12.70	.00	1.80	T.	.00	.00	.00	.26	.00	.75	1.50	12.03	14.51	H. S. Noyes.
Grass Valley	Nevada	3.38	16.53	1.69	6.54	.64	.52	.00	.00	.01	.00	1.00	3.02	18.13		Alvah Pendleton.
West Butte	Sutter	.50	6.05	.82	2.20	.00	.00	.00	.00	.05	.00	.00	7.70	40.96	51.96	S. P. R. R. Co.
Nicolaus	Sutter	1.12	6.75	.96	2.22	.01	3.04	.00	.13	.05	.00	.00	8.80	38.85		S. P. R. R. Co.
Emigrant Gap	Placer	4.12	18.80	3.77	1.02	1.14	.00	.00	.00	.15	.00	.00	11.60	41.47		S. P. R. R. Co.
Cisco	Placer	.85	22.85	T.	.15	.00	.00	.00	T.	.00	.07	.00	7.80	29.67	43.98	S. P. R. R. Co.
Summit	Placer	.45	20.70	.00	5.80	.95	1.60	.10	.00	.68	.00	1.62	4.90	27.17	32.40	S. P. R. R. Co.
Colfax	Placer	.99	9.42	1.52	4.92	.72	.00	.00	T.	1.09	.00	1.22	3.70	17.65	21.16	S. P. R. R. Co.
Auburn	Placer	2.04	11.78	1.50	4.34	.30	.00	.00	.00	.05	.00	1.05	2.20	20.45		S. P. R. R. Co.
Rocklin	Placer	.75	6.77	1.80	3.53	.00	.00	.00	.00	.00	.00	.00	8.34	36.24	43.74	Samuel Hale.
Towles	Placer	4.35	11.60	1.10	1.20	T.	.00	T.	.00	.45	.06	1.42				
Placerville	El Dorado	3.18	14.18	2.09	5.71	.53	.28	.00	.00	.00	.00	.00				

Shingle Springs	El Dorado	1,57	12,21	1,45	6,21	.06	.00	.00	.49	T.	1,08	6,18	29,38	33,65	Mortimer Phelps
Dunigan	Yolo	.97	6.93	1.13	2.41	.00	.00	.00	.00	.83	.330	15.37	16.07	16.07	P. R. R. Co.
Davis	Yolo	.99	6.14	.78	2.03	.00	.00	.00	.05	.50	.350	12.99	16.55	16.55	P. R. R. Co.
Woodland	Yolo	.80	5.58	.65	1.53	.00	.00	.00	.00	.40	.330	11.25	16.01	16.01	P. R. R. Co.
Knights Landing	Yolo	1.00	6.60	.75	2.30	.00	.00	.00	.00	.50	.350	14.48	17.75	17.75	P. R. R. Co.
Calistoga	Napa	2.22	11.18	1.58	2.82	T.	.00	.00	.18	1.50	4.82	24.30	31.00	31.00	P. R. R. Co.
Napa	Napa	1.87	10.68	.67	2.27	.17	.00	.00	.00	1.35	4.18	21.19	23.25	23.25	P. R. R. Co.
Sonoma	Sonoma	1.94	11.77	.93	.00	T.	.00	.10	.25	2.08	4.97	21.91	25.82	25.82	Robert Hall
Petaluma	Sonoma	1.25	10.34	.79	1.46	.00	.00	.00	.68	1.79	3.30	19.94	21.83	21.83	P. R. R. Co.
Ione	Amador	.83	7.25	1.55	1.41	.10	.60	.00	.67	.00	.25	4.42	19.34	19.34	P. R. R. Co.
Sutter Creek	Amador	2.04	12.27	1.68	5.38	.12	.00	.00	T.	.54	.81	3.21	26.05	31.16	E. C. Voorhies
Folsom	Sacramento	1.27	9.21	1.30	2.81	.83	.00	T.	.38	.59	4.82	20.66	22.83	22.83	Signal Service, J. H. Sturges
Sacramento	Sacramento	1.12	6.28	.94	2.53	.00	.00	T.	.02	.45	2.00	13.40	21.75	21.75	Signal Service, Jas. A. Barwick
Brighton	Sacramento	.80	4.87	1.08	1.98	.00	.00	.00	.00	.57	2.70	12.40	15.72	15.72	P. R. R. Co.
Galt	Sacramento	.61	5.35	1.11	2.56	.00	.00	.00	.00	.38	3.27	13.28	15.31	15.31	P. R. R. Co.
Elmira	Solano	1.01	7.10	.55	2.06	.00	.00	.00	.00	.76	3.41	14.89	26.15	26.15	P. R. R. Co.
Vacaville	Solano	1.34	9.40	1.06	2.65	.00	.00	.00	.16	1.06	4.32	19.99	31.65	31.65	A. V. Stephenson
Suisun	Solano	.82	6.37	.85	1.74	.00	.00	.00	.00	.96	2.79	13.53	18.00	18.00	P. R. R. Co.
Denverton	Solano	.83	5.64	.81	2.17	.05	.00	.00	.19	.54	3.06	13.34	17.58	17.58	S. K. Nurse
South Vallejo	Solano	1.15	7.72	.46	1.90	.00	.00	.00	.39	.00	.48	3.05	15.16	14.90	P. R. R. Co.
Benicia Barracks	Solano	1.12	7.17	.59	2.04	T.	T.	T.	.42	.38	3.50	15.22	15.94	15.94	Med. Dept., Dr. J. H. Janeway.
Angel Island	Marin	1.96	8.77	2.70	1.95	T.	.10	T.	.11	.17	2.47	18.25	22.64	22.64	Med. Dept., Dr. R. H. White.
Point Reyes L. H.	Marin	.35	3.90	.55	1.00	.05	.00	.00	.00	.45	.43	6.73	16.34	16.34	Lighthouse Dept., J. C. Rye.
Point Bonita L. H.	Marin	1.56	10.41	1.12	2.06	.00	.31	.00	.40	1.11	3.12	20.09	25.09	25.09	Lighthouse Dept., J. B. Brown.
Marinez	Contra Costa	.74	7.46	.56	1.94	.00	.00	.00	.33	.00	.30	9.5	12.48	16.75	P. R. R. Co.
Antioch	Contra Costa	.38	3.77	.49	.95	.00	.00	.00	.41	.29	2.30	8.59	11.07	11.07	P. R. R. Co.
Brentwood	Contra Costa	.39	4.95	.61	1.61	.00	.00	.00	.50	.40	3.15	11.61	11.05	11.05	P. R. R. Co.
Byron	Contra Costa	.48	3.43	.19	1.21	.00	.00	.00	.00	.42	2.90	8.63	12.11	12.11	P. R. R. Co.
East Brother L. H.	Contra Costa	.17	3.01	.16	.32	.02	.00	.00	.28	.10	.94	5.00	7.31	7.31	Lighthouse Dept., P. J. Quinlan.
Oakland	Alameda	1.31	8.01	.65	2.42	.00	.00	.00	.25	.81	3.52	16.97	20.57	20.57	P. R

RAINFALL FOR THE YEAR 1887, FOR THE ENTIRE PACIFIC COAST AND NEVADA—Continued.

STATIONS.	COUNTY.	January	February	March	April	May	June	July	August	September	October	November	December	Total	Normal or Average Precipitation	NAMES OF OBSERVERS.
San Francisco.	S. Francisco.	1.90	9.24	.84	2.30	.06	.67	T.	.01	.29	T.	.90	3.34	19.04	23.95	Signal Service, Nelson Goron.
Farrallones L. H.	S. Francisco	.80	7.52	.45	1.55	.00	.00	.00	.00	.90	.00	.00	2.92	14.34	17.91	Lighthouse Dept., J. W. Young.
San Mateo.	San Mateo.	1.21	9.16	.72	1.68	.00	.00	.00	.00	.47	.00	1.08	3.44	17.76	22.75	S. P. R. R. Co.
Menlo Park.	San Mateo.	.72	4.92	.46	1.81	.01	.00	.00	.00	.23	.00	.85	2.16	11.16	14.42	S. P. R. R. Co.
Pt. Montara L. H.	San Mateo.	1.96	8.11	.78	1.54	.16	.00	.00	.00	.21	.00	1.45	2.79	17.03	23.49	Lighthouse Dept., J. C. Jaime.
Pigeon Point L. H.	San Mateo.	.87	5.86	.18	1.57	.00	.00	.00	.00	.50	.00	1.34	1.91	12.23	16.22	Lighthouse Dept., C. B. Grass.
Año Nuevo L. H.	San Mateo.	1.36	6.16	.39	1.57	.30	.03	.00	.25	.00	.00	1.73	5.40	17.19	21.10	Lighthouse Dept., J. Hodgson.
Santa Cruz.	San Mateo.	1.01	9.62	.59	1.90	.02	.00	.00	.00	.42	.42	1.21	4.58	19.71	24.87	S. P. R. R. Co.
Aptos.	Santa Cruz.	.35	8.82	.76	1.61	.19	.00	.00	.00	.47	.05	1.11	3.72	17.68	21.47	S. P. R. R. Co.
San José.	Santa Clara.	.68	6.81	.63	1.28	.00	.00	.02	.00	.61	.03	.70	2.53	13.65	15.35	A. Block.
Santa Clara.	Santa Clara.	.58	6.94	.70	1.22	.00	.00	.00	.00	.41	.04	.69	2.45	13.63	19.18	S. P. R. R. Co.
Gilroy.	Santa Clara.	.90	5.14	.82	2.05	.00	.00	.00	.00	.43	.00	1.15	4.32	14.81	29.10	Douglas Vandenberg.
Los Gatos.	Santa Clara.	1.52	15.31	1.58	2.73	.04	T.	.00	.00	.50	.05	.05	6.91	30.00	29.10	S. P. R. R. Co.
Merced.	Merced.	.13	2.83	.20	1.74	.00	.00	.00	.00	.45	.00	.00	1.00	10.73	10.73	Adolph Wideman.
Los Baños.	Merced.	.06	1.50	.44	.43	.00	T.	.00	.00	T.	.00	.05	.74	3.22	7.34	S. P. R. R. Co.
Borden.	Fresno.	.25	2.24	.30	2.37	.00	.00	.00	.00	.46	.05	.00	.78	7.08	7.08	S. P. R. R. Co.
Fresno.	Fresno.	.40	2.79	.17	2.93	.03	.07	.00	.00	.49	1.15	.32	1.16	8.51	11.39	Signal Service, J. R. Williams.
Lemoore.	Fresno.	.23	2.19	.23	1.60	1.03	.12	.00	.00	.15	.33	.33	.90	7.11	9.05	S. P. R. R. Co.
Kingsburg.	Fresno.	.36	2.48	.13	2.10	.42	.00	.00	.00	.53	.23	.15	1.16	7.56	8.90	S. P. R. R. Co.
Bishop.	Inyo.	.05	1.58	.00	.35	.55	.35	.00	.00	.00	.15	.05	1.10	5.04	2.08	C. and C. R. Co.
Keeler.	Inyo.	T.	.36	.00	1.14	.04	T.	.52	.00	1.08	.84	.01	.48	5.04	3.86	Signal Service, D. C. Grunow.
Hollister.	San Benito.	.57	3.63	.55	1.32	.04	.02	.00	.00	.43	.00	.60	1.54	8.70	11.52	S. P. R. R. Co.
Salinas.	Monterey.	.78	4.62	.63	1.39	.05	.00	.00	.00	.68	.00	.94	2.40	11.49	13.41	S. P. R. R. Co.
Chualar.	Monterey.	1.60	2.50	.60	1.15	.03	.00	.00	.00	.00	.00	.00	1.81	10.51	11.45	S. P. R. R. Co.
Monterey.	Monterey.	.35	4.92	.60	1.16	.00	.05	.00	.00	.16	.00	.51	1.47	7.37	8.75	S. P. R. R. Co.
Soledad.	Monterey.	.34	3.94	.41	.54	.00	.00	.00	.00	.58	.00	.87	3.44	15.05	18.13	S. P. R. R. Co.
Pajaro.	Monterey.	1.57	5.95	.61	2.03	.00	.00	.00	.00	.00	.00	.94	2.40	11.76	13.45	S. P. R. R. Co.
Salinas.	Monterey.	.75	4.73	.54	1.63	.07	T.	.00	.00	.71	.00	.00	2.40	11.76	13.45	S. P. R. R. Co.
Traver.	Tulare.	.45	3.05	.32	2.27	.70	.14	.00	.00	.26	.24	.12	1.18	9.49	7.78	S. P. R. R. Co.
Goshen.	Tulare.	.35	2.66	.56	2.85	1.10	.00	.00	.00	.50	.17	.12	1.18	9.49	7.78	S. P. R. R. Co.
Tulare.	Tulare.	.45	1.98	.14	1.52	.90	.00	.00	.00	.01	.18	.05	.70	5.90	6.77	S. P. R. R. Co.
Lewis Creek.	Tulare.	.63	6.61	.33	3.15	2.50	.00	T.	.00	T.	.00	.00	.00	11.93	11.93	John Touhy.
San Luis Obispo.	S. L. Obispo.	.61	7.02	.47	1.51	.06	.35	.00	.00	.86	.25	1.40	3.15	11.98	20.47	Jesse E. Lewis.
Templeton.	S. L. Obispo.	.58	5.58	.17	.76	.05	.26	.00	.00	.56	.24	.79	3.18	11.98	20.47	S. P. R. R. Co.
San Ardo.	S. L. Obispo.	.20	2.63	.00	1.44	.68	.00	.00	.00	.14	.37	.32	2.07	10.30	5.43	S. P. R. R. Co.
Delano.	Kern.	.20	2.63	.00	1.44	.68	.00	.00	.00	.00	.00	.00	.00	10.30	5.43	S. P. R. R. Co.

Summer	Kern	20	2.23	00	2.04	20	00	T.	00	00	55	10	.69	6.01	5.05	P. R. R. Co.
Caliente	Kern	.38	07	2.06	21	00	00	00	00	00	.63	.05	1.43	10.77	P. R. R. Co.	
Keene	Kern	.51	6.20	.92	2.73	T.	20	T.	00	.12	1.32	.50	1.72	14.22	13.42	P. R. R. Co.
Tehachapi	Kern	.50	8.88	24	2.15	00	00	00	00	T.	.86	1.38			11.43	P. R. R. Co.
Mojave	Kern			00	1.14	00	00	00	00	00		.50	1.00		4.22	P. R. R. Co.
Colton	S. Bernard's	.21	3.64	00	1.94	00	00	00	00	00	.84		.80		9.53	P. R. R. Co.
San Geronimo	S. Bernard's	.06	5.07	.08	2.94	.14	00	07	00	00	1.23	1.51			9.37	P. R. R. Co.
Ravenna	Los Angeles	.14	7.37	00	2.55		00	00	00	00	1.40	.50	1.82		11.83	P. R. R. Co.
Newhall	Los Angeles	.00	12.38	.15	1.96	.10	.03	00	00	.02	.65	1.46	4.26	21.01	15.10	P. R. R. Co.
San Fernando	Los Angeles	.21	8.54	.27	2.36	.20	.07	07	07	00			1.41	14.80		P. R. R. Co.
Los Angeles	Los Angeles	.20	9.25	.29	2.46	.23	.08	10	00	.12	.13		2.68	16.27	17.51	Signal Service, G. E. Franklin.
Caluengo Valley	Los Angeles	.26	8.72	.28	2.46	.23	.08	10	00	.12	.13		2.16	12.18	10.84	Seward Cole
Anaheim	Los Angeles	.43	5.71	00	2.21	T.	00	00	00	T.	.75	.92	2.16			P. R. R. Co.
Santa Monica	Los Angeles	.05	7.07	00			00	00	00	.30			1.13	2.93	15.14	H. C. Towner.
Spadra	Los Angeles	.20	7.36	00	2.17		00	00	00		.00	.68	2.25	12.27		S. P. R. R. Co.
Nordhoff	Ventura	.22	16.81	.44	1.88	.18	00	00	00	.11	.89	1.63	5.29	27.45	28.17	Richard Robinson.
Guadalupe	S. Barbara	.41	4.50	.24	1.57	.00	.35	00	00	1.74				15.35		Thomas Sautsbury.
Santa Maria	S. Barbara	.50	5.95	.25	1.07	.22	T.	T.	00	.30	.00	1.09	2.69	12.07	14.42	L. E. Blackman.
Point Conception	S. Barbara	.30	4.92	.00	.55	00	00	00	00	.00	.00	1.88	3.03	10.68	11.40	Lighthouse Dept., T. L. Perry.
Santa Barbara	S. Barbara	.31	8.64	.13	1.43	.33	.03	00	00			2.59		17.55		Hugh D. Vail.
San Diego	San Diego	.00	.93	.00	.30	.00	00	00	00	.67		.00		1.90		S. P. R. R. Co.
Poway	San Diego	.09	4.87	.34	2.01	.34	00	00	T.	.62	.00	2.04	2.70	13.01	12.84	Adams Chapin.
San Diego	San Diego	.04	4.51	.02	2.14	.47	.04	.01	T.	T.	T.	2.08	1.14	10.45	10.79	Signal Service, M. L. Hearne.
Mammoth Tank	San Diego	.00	1.38	00	.13	.00	.06	00	00	.33		.20	.05		1.99	S. P. R. R. Co.
Oregon.																
Portland	Multnomah	12.31	2.81	8.00	5.10	4.77	1.44	.03	.58	3.06	1.34	3.43	11.34	54.21	51.13	Signal Service, E. J. Glass.
Albany	Linn	12.88	4.50	9.03	4.55	2.91	1.21	00	.09	1.67	.97	5.92	14.21	57.94	46.90	John Briggs.
Roseburg	Douglas	8.64	6.24	2.38	3.29	1.53	.89	.07	.08	.51	1.13	3.19	8.89	36.81	35.00	Signal Service, B. S. Pague.
Bandon	Cass	16.28	6.25	7.07	6.47	.51	.47	.15	.05	1.15	1.43	6.57	14.54	65.54	42.70	George Bennett.
Ashland	Jacksonville	4.98	2.71	.99	3.39	1.15	.74	.33	.44	.66	.56	.94	3.38	19.87	21.42	Signal Service, F. Newman.
Linkville	Klamath	2.18	1.47	.49	1.59	.54	.94	.51	.42	.05	T.	.72	1.86	12.77	16.12	Signal Service, C. E. Butler.
Fort Klamath	Klamath	5.64	5.98	.86	1.80	.85	.40	.70	.53	.34	.32	1.66	4.33	23.41	24.23	Signal Service, G. H. Willson.
Lakeview	Lake	2.15	2.23	1.06	1.80	1.05	1.38	.30	.54	.09	.01	.32	1.51	12.44	18.27	Signal Service, E. C. Thompson.
Washington Ter.																
Tatoosh Island	Challam	14.46	11.30	16.36	8.51	8.85	1.12	1.24	1.39	3.43	11.83	10.15	17.47	106.11	91.32	Signal Service, W. Brumfield.
Neah Bay	Challam	22.30	7.20	13.43					1.17	3.80	14.84	13.39	22.57		111.35	Signal Service, Charles Adie.
Port Angeles	Challam	6.20	4.68	3.65	1.16	2.11	1.12	.56	.14	1.15	2.89	4.52	6.07	34.25	29.44	Signal Service, William Bell.
Pyatt	Challam	13.76	8.91	1.24					.07	2.48	5.49		7.10		64.45	Signal Service, H. A. Carr.
Blakely	Kitsap	3.51	4.85	8.60	3.66	3.42	1.15	.10	.02	2.81	1.45	5.01	7.89	42.47	44.79	R. M. Hoskinson.
Olympia	Thurston	9.83	4.28	10.60	3.94	5.66	1.01	.74	.18	3.34	1.51	15.75	61.78	56.87	56.87	Signal Service, E. McGovern.
Fort Canby	Pacific	11.91	6.29		4.88	.46	.33	.16	3.36	2.73	7.25	15.18			57.06	Signal Service, John Grover.
Walla Walla	Walla Walla	2.35	1.78	1.83	1.57	1.08	2.12	.03	.71	1.55	1.52	3.06	2.83	20.43	17.58	Signal Service, H. S. Blandford.
Spokane Falls	Spokane	1.91	1.64	2.50	1.83	1.06	2.06	1.41	1.26	1.29	1.04	1.22	2.88	20.10	29.27	Signal Service, Chas. Stewart.

RAINFALL FOR THE YEAR 1887, FOR THE ENTIRE PACIFIC COAST AND NEVADA—Continued.

STATIONS.	COUNTY.	NAMES OF OBSERVERS.	
		Normal or Average Pre- cipitation	11.30 9.97
		Total	8.54 8.05
		December	2.08 1.55
		November	T. .03
		October	.04 T.
		September	.11 .35
		August	.00 .13
		July	.23 .09
		June	.46 1.14
		May	.46 .36
		April	.65 1.94
		March	.23 .40
		February	3.27 1.55
		January	1.01 .51
<i>Nevada.</i>			
Carson City	Ormsby		Chas. W. Friend.
Winnemucca	Humboldt		Signal Ser., E.M. Von Harlingen.

MONTHLY BULLETIN FOR FEBRUARY.

SIGNAL SERVICE, U. S. ARMY,)
DIVISION OF THE PACIFIC,
SAN FRANCISCO, March 1, 1888.)

Weather.—The month has been marked by an absence of violent storms on the Pacific Coast, and by unusually high temperatures. The rainfall has been light in all districts. Rain fell in Northern California on the first, tenth, eleventh, twelfth, and fourteenth; in Southern California on the first, sixteenth, seventeenth, twenty-eighth, and twenty-ninth; and in Oregon and Washington Territory on the first, second, tenth, eleventh, twelfth, seventeenth, eighteenth, nineteenth, twentieth, twenty-first, twenty-seventh, twenty-eighth, and twenty-ninth.

Temperature.—The mean temperature for the month was higher than the normal temperature for February in all directions. The departure from the normal increases northward and eastward from Southern California, where it is about one degree, becoming about ten degrees in eastern Washington Territory and northern Idaho. Mean temperatures at selected stations were as follows: Walla Walla, 45°; Portland, 44°; Roseburg, 44°; Eureka, 48°; Sacramento, 53°; San Francisco, 53°; Fresno, 53°; Los Angeles, 54°; San Diego, 55°.

Rainfall.—The rainfall was markedly below the average February rainfall, along the entire Pacific Coast. The deficiency was greatest in western Washington Territory, where it amounted to five and one half inches. Along the coast of Oregon and California the deficiency was about three inches. From the coast eastward, the deficiencies become less, the rainfall becoming about normal in Idaho and Utah. The following table shows in detail the amount and distribution of the rainfall for the month and season:

STATIONS.	Normal for February.	Total for February, 1888.	Average for Season to March 1st.	Total for Season to March 1, 1888.
Olympia, Washington Territory	8.45	3.79	43.79	40.56
Walla Walla, Washington Territory	1.80	.80	11.10	12.76
Spokane Falls, Washington Territory	1.92	.60	23.82	13.70
Portland, Oregon	7.03	3.40	37.08	30.68
Roseburg, Oregon	4.72	2.80	25.82	25.10
Redding, California	4.49	1.84	24.14	16.30
Red Bluff, California	3.79	2.17	18.65	10.11
Corning, California	2.54	1.04	10.30	10.18
Chico, California	3.62	.72	14.15	2.65
Orland, California	2.05	.81	9.56	9.50
Willows, California	1.31	.53	7.71	6.84
Auburn, California	5.19	1.58	22.59	16.91
Rocklin, California	2.92	.56	13.63	8.53
Davis, California	2.27	.40	11.44	8.40
Calistoga, California	4.86	1.45	22.40	16.84
Napa, California	3.79	1.90	16.36	12.30
Sacramento, California	3.58	.60	14.23	7.96
South Vallejo, California	2.23	.55	10.21	9.67
Suisun, California	2.77	.48	14.53	9.61
Martinez, California	2.80	.40	10.93	8.87
Oakland, California	3.68	1.08	13.77	12.13
Stockton, California	2.07	.20	8.11	6.98
San Francisco, California	3.99	.94	17.80	12.38
San Mateo, California	2.95	.63	13.10	10.93
Menlo Park, California	1.92	.91	9.18	7.77
San José, California	3.22	.40	8.50	8.04
Santa Cruz, California	4.34	.62	17.18	16.14
Aptos, California	3.27	.61	16.14	12.76
Gilroy, California	3.18	.39	13.83	12.02
Fresno, California	1.59	.10	6.64	3.92
Hollister, California	1.86	.72	8.02	6.15
Salinas, California	2.34	.58	9.37	8.53
Monterey, California	2.39	.51	8.89	8.92
Pajaro, California	3.03	.41	12.95	10.39
Soledad, California	1.61	.55	6.05	5.80
Goshen, California	1.39	.19	4.97	4.27
Tulare, California	1.23	.90	4.35	4.32
Los Angeles, California	4.07	.80	12.05	10.70
San Diego, California	2.49	1.50	7.92	6.73
San Ardo, California .....	.....	.07	.....	6.62
King City, California .....	.....	.38	.....	5.96
San Miguel, California .....	.....	.00	.....	8.47
Paso Robles, California .....	.....	.15	.....	9.32
Templeton, California .....	.....	.10	.....	11.14
Pleasanton, California	3.02	.28	10.97	7.58
Livermore, California	2.44	.32	9.82	9.06
Ione, California	3.28	.43	11.78	9.02
Turlock, California	1.37	.04	5.86	4.69
Livingston, California	1.22	.11	4.55	5.17
Kingsburg, California	1.35	.29	5.54	4.75
Yuma, Arizona Territory .....	.41	.00	3.34	3.09

CLIMATE AND HEALTH RESORTS OF CALIFORNIA.

By J. W. ROBERTSON, A.B., M.D., Assistant Physician and Pathologist, Napa, California, Insane Asylum.

California has but recently attracted the attention of sanitarians. This tardy recognition was partly due to its isolation, partly to the fact that the argonauts looked not at the sky, but at the earth, and cared nothing for scenery, climate, or a pure atmosphere. The coast belt contained no gold, therefore they ignored it. Southern California, where now bloom perennial orange groves and the rarest exotics, they pronounced a desert scarcely able to support a meager growth of sagebrush and cactus, a fit habitation for the coyote and the squalid troglodyte. Only recently has the fact been known that something is to be found more precious than gold, and from all over the world thousands of invalids flock here; they do not realize that California has a cosmopolitan climate adapted to all diseases that can possibly be benefited by change of air; that within its borders are to be found the altitude of the Alps, the scenery of Switzerland, the fruits of the tropics, numerous mineral springs which equal in value and are more healthfully situated than are those of the eastern United States or Europe, the pure air of the Colorado highlands, and the winter climate of Florida; and that it is a nice question to always properly decide on that location best situated to relieve their particular disease. They do not always choose wisely.

Nor is this possible. Every town, every mineral spring, every seaside resort, so loudly and so persistently bids for their countenance, and so little reliable information outside of interested statements can be obtained, that they cannot intelligently select.

I shall attempt to briefly outline the essential features of our climate, to explain in what particular respects we claim preëminence for it, the rationale of its therapeutic influence, and to mention those localities which are best adapted to certain classes of disease.

While the climate of California is mainly due to its situation midway the temperate zone, the remarkable uniformity of temperature is due to local causes. The great law that, in the northern hemisphere, all western coasts are warmer than the eastern, is particularly well pronounced when the eastern is compared with the western coast of the United States. The mean isotherm of 50° which passes through New York, latitude 41°, bears northward as it crosses the continent, touching the Pacific at Vancouver Island, latitude 49°. Nature also draws isotherms in her distribution of trees and plants. While on the eastern coast 60° is the northern limit of coniferæ, they are found as high as 68° and 70° in regions adjoining the Pacific. It is then evident that the climate of California is much more temperate than that of the Eastern States, which are situated in the same latitude; but this does not hold true of Southern California. Here the conditions are reversed; San Diego, in the same latitude as Charleston, is 8° cooler. San Francisco and Washington, in the same latitude and having the same mean annual temperature, have climates very dissimilar, owing to the great difference between the mean summer and winter temperatures of Washington, which amounts to 40°, and the small difference in San Francisco being not over 12°. The mean annual temperature of Santa Barbara is 60°, San Francisco 55°, nor does it fall below this on the north-

ern coast. In Crescent City, 300 miles north, the temperature is as mild as is that of San Francisco, frost and snow being of rare occurrence.

That this coast line, stretching through 8° of latitude, should have such remarkable uniformity of temperature, while phenomenal, is explained by the constant west wind which comes from the warm Japan current. These winds bear with them the uniformity of temperature of large masses of water, and render the west coast climate warm in winter and cool in summer. For this reason isothermal lines are, as they near the coast, so deflected as to run north and south, and mark out three climatic belts, which I have named Coast, Valley, and Mountain. This division has been generally adopted, and from a therapeutic standpoint answers admirably.

The coast climate extends several hundred miles north and south, and reaches from five to twenty miles inland.

The valley belt, beyond the Coast Range, commencing with Shasta Valley on the north, extends down through the Sacramento and San Joaquin Valleys, into the arid plains of the Mojave and Colorado Deserts, while the mountain includes the Sierra Nevada beyond. Rainless summers characterize all these regions.

That portion of California which has obtained the greatest reputation; which has filled the eyes of strangers with visions of a land where the orange and the vine flourish: where the tenderest plants grow unprotected; where it is neither so warm as to be sultry, or so cold as to necessitate fire; where nature has so blended her charms as to hush the murmuring of the most fastidious invalid, is along the coast and the adjacent country directly influenced by it. And this is of truth a wonderful region: a coast line extending through 8° of latitude where snow is phenomenal and frost rare; where the mean daily, monthly, and annual temperature varies within a few degrees only; where the bright sunshiny days are the rule, and sultry ones unknown; where the fresh salt air so invigorates as to prove an exhilarating tonic; and where flagging energies and a toneless system are revived and thrown into a state of the highest tension, commands recognition. To every picture there is, and should be, some dark lines. In our enthusiasm we often forget to mention the fogs which float in from the ocean and enwrap us with a chilly embrace; that the breeze which so intoxicates us, and which, by long habit, we have learned to call bracing, searches the marrow bones of the unacclimated, and sends cold chills through the enfeebled frame of the invalid. This holds true of that region only which is north of Point Conception, and is directly on the ocean.

Our boasted climate is only exemplified to the full in those places so far away from the coast that the radiant heat will remove all rawness from the sea breeze, or in those valleys adjacent to the coast, but protected by the foothills.

The Japan current, which hugs the northern shore so closely, giving us a cool and bracing climate, does not exert the same influence south of Point Conception. This is partly due to its waters being heated by the more southern seas and a hotter latitude, partly to the fact that it is at this point separated from the main land and pushed to the westward by a warmer current. The wind blowing over this no longer chills, but still exerts a decided influence. For this reason, certain portions of California possess a climate, in its way, unapproachable, and not to be rivaled the whole world over.

So loudly, so ably, and with such justice have its praises been heralded, that to add were useless. Even here, it is well, in selecting, that some care should be exercised. Climatically speaking, the therapeutic area of Southern California is small. It is limited to those localities only which

are directly influenced by the ocean breeze, and extends but a few miles inland. In the valleys back from the coast, the summer heat becomes unbearable, there is but slight vegetation, and good water is not easily procured. The winters, however, are said to be mild, dry, and wonderfully invigorating. Only a few inches of rain falls, and out-door life is practicable.

It is this region that first attracted the attention of sanitarians and gave California its greatest climatic reputation. Even now the majority of invalids look to Los Angeles as to a new Mecca, and with ever increasing wonder behold the mighty changes wrought by the hand of man, which for once have far outrivalled nature even in her most lavish mood. This climate speaks so strongly for itself, it is so mild and delightful, that the most caviling cannot find fault, and the invalid susceptible to the slightest chill, utters no complaint. For this reason it is taken for granted that it of necessity agrees. What is agreeable does not always agree. The climate of San Francisco, directly influenced by the cold ocean breeze, is not agreeable and makes but a poor impression on the visitor. Beyond all other spots along the coast it is disagreeable, and all drawbacks to the coast climate are here illustrated in extreme. This is caused by its location. The Sacramento and San Joaquin Valleys here have their outlet. During the summer both are intensely hot, and the rarified air, rising rapidly, forms a vacuum which the ocean breeze rushes in to fill. The Golden Gate is indeed a gateway, presenting no obstruction, and the wind sweeps through it, across the bay and up the Sacramento and San Joaquin Rivers with great velocity. During the early morning, and ordinarily, until near noon, the bright sky, the mild and bracing atmosphere, makes one so tingle and scintillate with life that every nerve of the body and all the faculties of the mind are in a state of tension, and no more delightful form of intoxication can be imagined. When the interior valleys, warming up, begin to suck in the cool sea breeze, the gentle motion of the air adds a new delight. In the course of an hour, all is changed. It is no longer a breeze—it is a hurricane bearing everything before it that is ordinarily moved by such a force. Between the town and the ocean stretch several miles of sandhills, and, fed by these, the streets soon become a swaying cloud of dust, fine sand, and rubbish. On gala days when the sun shines on the interior valleys with unusual intensity, small gravel is added, that cuts like a whip, and fills eyes, nostrils, and mouth with a grimy coat. Strange to say the inhabitants soon become accustomed to this, and after a few months residence, this one drawback counts for naught against its more powerful claims for their approbation. Along the whole coast the heat of the interior causes a like afternoon breeze, but except in a few localities where a break in the foothills gives it free sweep, is not disagreeable.

This climate is susceptible of subdivision; the one just described being directly on the coast; the other, more moderate, but of the same type, a few miles inland, and protected by the foothills from the full force of the breeze. Here lie many valleys with a climate equaling that of Southern California. Those which have become best known, because of their proximity to San Francisco, are the Livermore, Santa Clara, Napa, and Santa Rosa Valleys. None of them are distant an hour's ride, but because of their location, the afternoon breeze is shorn of all harshness. These are fast being occupied as summer resorts. The country is rolling, well watered, and fertile, bearing grapes, fruits, and flowers in great profusion. In summer the thermometer may register 70° or 80° at midday, but such heat is exceptional. The mornings and afternoons are never sultry, and

the nights are cool. Nor is there any evening fog. During the winter frost occurs but rarely, and snow and ice are unknown.

Still further inland, in the very heart of the foothills, there is a region which should attract sanitarians, by reason of its promise of therapeutic usefulness. It combines magnificent scenery, moderate elevation, and a bracing atmosphere, with what promise to be most important mineral springs. These occur in great numbers, and in a country which, without them, would leave but little to be desired. Fish and game abound, and prove a sufficient attraction to force energy and life into the most lethargic, and induce that amount of exercise necessary to vigorous health. Volcanic products are here found in great abundance, and mineral deposits are frequent. Water, trickling through these, become impregnated with various salts, and, emerging as springs, undoubtedly possess some healing power. Little scientific attention has been bestowed upon them, and, while a few have been authoritatively analyzed, and honest efforts have been made to have them stand on their own merit, many have been given names and analysis, tending rather to prove their resemblance to some celebrated eastern or European spa, than to make plain the many and strong claims peculiar to themselves.

While Sulphur, Vichy, and Congress Springs may be rightly named, and their claims of resemblance to their more celebrated sponsors may be just, yet, because of their origin, it is no more probable that any two would resemble than that two kaleidoscopic pictures, although formed by the same glasses, should be identical. The more disagreeable the water tastes, the more redolent it is of sulphur, or the more stained with iron, so much the more eagerly is it sought after. No matter what salts be contained in the water, or what be their degree of concentration, the amount consumed is, as a rule, limited only by the capacity of the stomach, or its ability to retain. Thus abused, their very best therapeutical effects cannot be obtained. At a few of the more prominent resorts, physicians are located who can give intelligent directions with regard to the waters, and recommend or forbid their use, therapeutical precautions often disregarded.

These springs are scattered over the whole State. Provided they be easily accessible and the surrounding country, climate, and scenery be such as to warrant the outlay, a health resort is established; otherwise they are ignored. Hundreds are found throughout the mountains of the Coast Range in spots wild and inaccessible, but even these are by no means neglected. Wild animals, either attracted by the singularity of the taste of the water, or for proved qualities, flock to them, and their location is usually marked by numberless trails centering there.

Various classifications of these springs have been attempted, but their ingredients so vary that no rigidly scientific system can be adopted. Nor have the necessary analyses been made to even classify in accordance with the nomenclature ordinarily employed. But crudely as they have been used, and greatly as they have been abused, there is much and unanimous testimony as to their beneficial effects in certain chronic diseases. Comparatively few springs are found either in the northern or southern parts of the State with more than a local reputation. It is in Central California, in the foothills already mentioned, that they abound. Lake County, so named for the beautiful sheets of water within its boundaries, contains the majority of these; although many are found in the adjacent counties of Napa, Solano, and Mendocino. In this region alone some thirty locations have been made, buildings erected, and health resorts established. At many of these there are several springs both hot and cold; the former being used topically or in the form of bath, the latter internally.

Clear Lake, surrounded by mountains, lies in the heart of this region. It is easily reached from San Francisco, either by Calistoga or Cloverdale. Daily stages here connect with the various health resorts, the time occupied in reaching the most remote not being over twelve hours from San Francisco.

The climate of the valley belt I cannot unreservedly praise. During the summer the thermometer ranges high, in certain localities registering 110° or over. This heat is better borne than would be that of a like intensity in the East, because of the extreme dryness of the atmosphere. This, like a sponge, absorbs moisture from the body with such rapidity as to cool the surface. Probably this evaporation is so great as to dry the fluids in the body, and certainly acts injuriously upon the mucous membranes of the nose and bronchial tubes. Many cases of malaria, diphtheria, and other endemic diseases, here rankly flourish; partly due to artificial irrigation, but more especially found in those localities along the Sacramento and San Joaquin Rivers which are annually overflowed. During the winter months therapeutic benefit can be obtained even here, by reason of the mildness of those localities far to the south, or where the Coast Range breaks and allows the warmer coast climate to exert a moderating influence.

Oroville, situated on the western slope of the Sierras, is now regarded as the heart of the northern citrus region, and the country adjacent is being fast settled by invalids who here combine a mild climate, with work not unpleasant.

The winter mildness of the Sacramento Valley is not altogether due to the warmer coast wind. It lies at the foot and on the western slope of the Sierra Nevada Mountains, which effectually protect it from the cold polar trade wind. This is well illustrated by comparing the winter climates of the western and eastern slopes. Truckee, on the eastern slope, is not uncommonly buried in ten to twenty feet of snow, while Colfax and Auburn, just across the divide, are surrounded with green fields, and a little further down, fruit orchards and orange groves flourish.

Therapeutics.—The difference between the subdivisions of the coast climate, viz.: that found directly along the coast and that of Southern California and inland valleys, is the difference between a plunge both in the ocean and a tepid sitz bath which is so near the temperature of the body as to produce a feeling of languor only; in other words, should the patient be so feeble that the cold wind and salt air chill, and should the after effect be such as to leave him depressed and unrevived, a residence on the seacoast is not desirable; on the other hand, should the patient be more robust and of a naturally vigorous constitution, the cold air, at first chilly and raw, soon produces a state of well-being. Vigor and tone are infused through the body, difficult for one who has never experienced it to understand.

But there are certain diseases, no matter what the constitution of the patient be, which are deleteriously affected by the coast climate. Those suffering from rheumatism should especially avoid the coast and seek a residence either in the mountains or at certain mineral springs. Shovel Creek Springs, situated on the Klamath River, in the northern part of Shasta Valley, has obtained a reputation for its efficacy in the cure of this disease. Mud impregnated with hot mineral waters is used topically, and often succeeds in relieving those obstinate forms of chronic rheumatism when ordinary remedies fail. Hot baths are also to be obtained, but are not to be recommended unless competent medical advice has been sought and the circulatory system found perfect. Other springs noted for their efficacy in this disease are found in the lake country. Much benefit has

followed the internal use of the waters of the Bartlett and Witter Springs. Fulton Wells and Paso Robles have also obtained a wide reputation. Chronic bronchial and laryngeal affections are unfavorably affected by the raw sea air. For these the foothills, where the temperature is even and the climate mild, is a most suitable location.

The Highland Springs of Lake County, both by reason of their climatic surroundings and the specific influence claimed for its waters, has been highly recommended.

Those of a bilious temperament should avoid the coast. For some reason, to me unknown, it acts injuriously upon such cases. Avoiding the diseases just mentioned, those otherwise affected may seek the coast with a certainty of benefit, provided that their constitutions be sufficiently robust to react in the bracing atmosphere. Malaria never originates on the coast, and when contracted elsewhere and brought here, if mild, is at once cured; when more deeply rooted it assumes a remittent type and will often recover without aid of medicine. Those cases of malarial poisoning accompanied by serious visceral lesions, which are of such frequent occurrence in the southern and southwestern States, and which medicine cannot relieve, should be sent to this climate. Those kidney diseases which water impregnated with lime is supposed to aggravate, are relieved by the use of the waters here, which, as a rule, are deficient in this.

Certain waters, strongly impregnated with alkaline carbonates, such as those found at Byron, Tolenas, and Skaggs Hot Springs, are also very efficient in relieving these cases.

Consumption is supposed to be favorably influenced by the modified coast climate. It is true that the great majority of those coming to Southern California are of this class, but whether they derive any benefit outside of the hopes engendered and the exercise they undergo in their flight from death, I cannot say. Provided that the etiology of this disease be settled, that the bacillus which is beyond question found in the tuberculous deposits be not an effect, but the cause, and that its multiplication results in lung destruction, then I cannot understand how any climate can materially benefit. A germicide, and not a climate, is essential for a cure. On the other hand, if it be an inherited disease, depending on a depraved constitution which, at the least exposure, is liable to break down and manifest itself by the formation of tubercles, then what improves and renders the body vigorous must also beneficially affect the lungs.

Consumptives should be warned not to drink the water of or to bathe in the hot mud of the various mineral springs. When the disease is advanced, they should be kept at home, no matter what part of the world it be in.

Many come to California in the last stages, and only reach it to die among strangers. When the advice of the physician is overruled, and they must choose some climate, that region south of Santa Barbara should be selected; both because of its easy accessibility, and by reason of its mildness and the unchangeable climate there found. In the early period much can be hoped for from this climate. Numerous health resorts have been established both directly on the coast and in the interior valleys. For those incipient consumptives who are fond of sport, and for whom an outdoor life is desirable, certain portions of the mountain belt are to be recommended. Above 3,000 feet the oppressive heat disappears; though still warm, outdoor exercise can be taken without inconvenience. Camp life can be indulged freely, the dry summers assuring freedom from inclement weather. It combines, together with magnificent scenery, a desirable elevation, dryness, a moderate temperature, and a pure atmosphere impreg-

nated with the balsamic emanations of the pine and fir trees. There is an immunity from all endemic diseases, except mountain fever—described by Dr. Kober in the last report of the Secretary of the State Board of Health.

This exposure to a dry and high atmosphere presents a hopeful prospect of recovery. Nature here acts on the lungs in a manner similar to that of the pneumatic cabinet recently so much in vogue. It causes the lungs to expand more freely, and in this way assist in their development. What specific curative properties altitude possesses over consumption I do not know. I cannot believe that it is the mere fact of causing lung expansion. Certainly less oxygen is obtained in an equal number of respirations. As recent observations tend to show that germs do not readily develop in higher altitudes, this would be a plausible explanation. Consumptives should be absolutely forbidden to use the mineral springs, as under no circumstances can benefit be derived. Certain cases, uncomplicated by bronchial lesion, seem to do well on the coast. This is probably due to lack of germs; for along the whole coast, except in the region of large cities, endemic and epidemic diseases are unknown. The wind undoubtedly acts as a germicide.

In a paper necessarily so brief, I cannot more fully enter into a discussion of the therapeutical effect of our climate. I trust that in making this summary of the topography of California, its climate, its peculiar environment, and its many natural advantages, I have made the subject so well understood that it will be possible for every thinking physician to draw the legitimate conclusions, and to so intelligently advise those invalids desiring a residence here, that they may select a proper location. They should remember that much depends not only upon the disease itself, but also upon the condition of the patient and the peculiarities of his constitution.

DESICCATING NORTH WINDS, AND HOW MODIFIED.

HOW OUR DESICCATING NORTH WINDS MAY BE AMELIORATED BY PLANTING TREES; THEREBY ASSISTING NATURE IN ITS MANNER OF MODIFYING CLIMATES.

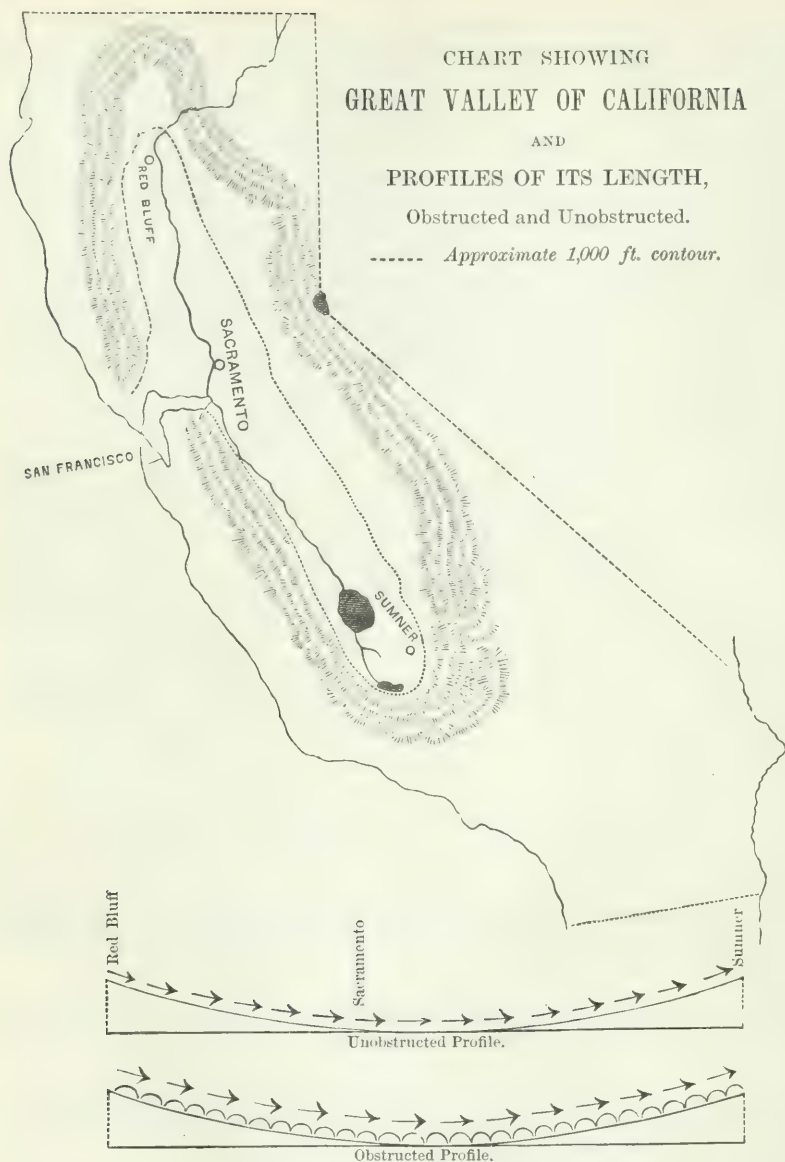
The letter following is from Lieutenant W. A. Glassford, Signal Corps, to Joaquin Miller, one of the Commissioners on Forestry:

U. S. SIGNAL OFFICE, }
SAN FRANCISCO, January 18, 1887. }

My Dear Mr. Miller:

Referring to our conversation this morning in the "Amador," upon the subject of forestry, the north wind, and especially my suggestion for diminishing the ravages of this dreaded desiccating wind, I beg leave to address you further upon my proposition, which time this morning would not permit me to fully elaborate.

When I came here just one year ago, and took charge of the Pacific Coast Division of the Signal Service, these peculiar north winds were of such a strange and new character that they struck me with peculiar force. I soon saw they were confined mostly to the Sacramento and San Joaquin Valleys; at least here their voyages were most marked. From a study of



the weather maps the coincidence of a high barometer over Washington and Oregon was noteworthy at the time of this occurrence. In a paper on "Weather Types on the Pacific Coast," read by me before the California Academy of Sciences, and published in September, 1886, in the "Bulletin," under the head, "North Pacific Cyclonic Type" (republished in the "Annual Meteorological Review of the State of California, for 1886"), I described the conditions under which the north wind occurred. It will thus be seen, that I soon learned the secret of predicting them, and as a matter of fact did so several times successfully; one time in particular,

about September 5, 1886, upon which occasion the Chief Signal Officer was traveling down the Sacramento Valley, and spoke of it as a triumph, and the newspapers mentioned the matter in terms of praise. However, this prediction, while an interesting scientific question, otherwise did little good, there being no means to provide against them. I was led, after such commendations by the Chief Signal Officer, to inquire further into these observations, and to determine the cause of damage. Last year, up to June, the prospect for a large wheat crop was said to be never better. In this month (June), came a severe north wind, and the wheat anticipated diminished, at once, millions of cents. It was late in the season, the wheat was ready to cut, and it was found in this case it was not altogether the drying up of the wheat, some being in the milk, but as well the thrashing or shelling out of the grains from the ripe heads, done by the severe wind presumably whipping the heads together. Upon sure investigation it was learned that a field on the south side of a stream running westward, and that was skirted by a growth of tall trees, was not so much damaged as the field on the north side. This being true, and the same conditions of soil, etc., existing on either side of the belt of timber, it seems remarkable that the difference in yield may be attributed to the north wind shelling out the grain on the north side, or windward, of this row of timber, and leaving the grain undisturbed, or much less injured, on the south, or opposite side.

By extending this principle of observation or applying forest protection, it will be seen that trees planted in rows east and west can be made to save grain. The greater the number of these rows the more the wind will be broken. I believe it possible, if further evidence establishes the above to be true, by this artificial means to elevate and break up the wind from the immediate surface sufficient almost to get rid of this troublesome visitant's ravages.

This north wind occurs with greatest intensity in the great valley of California which embraces about one third of the agricultural land of the State; is in area about 1,700 square miles; in width, from 40 to 60 miles; and in length, from northwest to southeast, about 400 miles. Bordered on each side by almost parallel mountain walls, whose steep barometric gradients from north to south exist streams of air (wind) that flow (blow) down this valley is undisturbed.

In this natural trough, I believe it is for man, by artificial means, in planting trees in rows, east and west, to give that protection that will make the great valley of California from year to year, without interruption, the greatest cereal producing valley in the world, not to mention the advantages incidental derived to fruit and other producers of this famous valley.

It will of course take some years to even appropriately accomplish much, but it will result from the movement that you and others have started.

You speak of it as being rather scientific; nothing to me is more simple. Knowing the wind blows with destructive violence, that it can be obstructed by rows of timber, it becomes only a practical question of advocating tree planting. A sketch of the State of California, showing the mountain boundaries of the great valley, with profile, will illustrate the trough down which the wind blows, and, passing over, as it does, a level, unobstructed surface, reaches a great velocity down to a few feet of the ground. On that same surface place the obstructions (east and west rows of trees), as illustrated in the profile, and the wind is broken in the leeward side, and if the rows of trees are frequent enough, the wind will perhaps be elevated to a height above all danger.

I am very sorry that military necessity compels me to leave this State,

where I had intended to make further investigations of this matter: but it is hoped you may nevertheless supplement this idea with your other good arguments in favor of forestry, and use it to some good purpose.

It would be a pleasure to hear from you, and I will further illustrate my idea if necessary. Mail will reach me at Signal Office, Prescott, Arizona, whither I shall go satisfied with the indorsement of a most generous people.

Hoping the growing success of the forestry cause,
I am faithfully yours,

W. A. GLASSFORD, Lieutenant Signal Corps,
Assistant.

JOAQUIN MILLER,
The Oakland Heights, Oakland, California.

RAINFALL, TEMPERATURE, AND CLEAR DAYS FOR THE SOUTHERN STATES AND PACIFIC COAST.

The tabulated matter in the following tables was taken from the Chief Signal Officer's annual report for the year 1886, and gives the average yearly rainfall, average winter, spring, summer, and autumn temperatures, also the average annual temperature, the highest and lowest temperature, and the average annual number of clear days for the Southern States, Arizona, California, Oregon, and Washington Territory. The States represented in this table are Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, Kentucky, Missouri, and Texas, Arizona, and Washington Territories, and California and Oregon. California stands ahead of all the Southern States in its having more clear days and a higher minimum temperature than any point in the south except Key West, Florida. This table will be found valuable because it represents such a great number of points in all the Southern States except Maryland and Delaware:

AVERAGE TEMPERATURE, CLEAR DAYS, AND RAINFALL, FOR THE SOUTHERN STATES.

STATES AND STATIONS.	Average Rain-fall	Average Winter Temperature	Average Spring Temperature	Average Summer Temperature	Average Fall Temperature	Average Annual Temperature	Highest Temperature	Lowest Temperature	Average Annual No. Clear Days
<i>Virginia:</i>									
Norfolk	51.61	42.2	57.0	77.3	60.7	59.3	102.5	6.0	121.3
Lynchburg	42.21	38.8	56.1	76.3	57.7	57.6	101.8	*5.0	131.6
<i>North Carolina:</i>									
Charlotte	54.47	43.8	59.6	77.1	61.5	60.6	101.0	*5.0	108.5
Hatteras	73.61	46.4	57.1	76.6	66.4	61.8	92.0	8.0	97.8
Kitty Hawk	65.55	43.8	55.4	76.1	63.3	59.8	100.0	8.0	125.5
Fort Macon	59.16	47.3	58.8	77.2	66.0	62.4	91.0	8.5	100.4
Smithville	50.84	48.4	61.6	79.0	65.2	63.5	100.0	6.0	121.5
Wilmington	57.79	48.2	62.0	78.5	64.0	63.1	103.0	9.0	124.4
Asheville	40.20	37.9	53.5	70.7	53.5	53.9	90.0	*1.0	-----
<i>South Carolina:</i>									
Charleston	59.92	51.2	65.0	81.0	66.8	66.2	104.0	13.0	132.5
Aiken	-----	45.8	61.3	77.4	62.0	61.6	102.0	3.0	-----
<i>Georgia:</i>									
Augusta	49.43	48.8	64.2	80.2	64.5	64.7	105.0	7.0	126.8
Savannah	52.70	52.9	66.6	81.1	66.9	67.1	105.0	15.0	118.2
Atlanta	56.08	46.1	61.3	76.5	62.4	61.7	97.5	*1.3	114.8
<i>Florida:</i>									
Jacksonville	54.70	56.8	69.1	81.4	69.9	69.5	104.0	19.0	124.0
Cedar Keyes	55.86	60.1	70.3	81.7	72.4	71.1	96.0	22.0	162.0
Key West	40.31	70.8	76.9	83.8	78.8	77.7	97.0	44.0	114.8
Sanford	45.72	61.6	71.6	80.5	73.3	71.8	99.4	28.5	131.0
Pensacola	67.31	56.0	67.9	80.3	69.5	68.4	97.2	16.3	128.2
<i>Alabama:</i>									
Mobile	65.47	52.6	67.2	81.2	67.7	67.2	101.0	13.9	127.8
Montgomery	53.15	50.4	65.3	80.6	65.5	65.6	106.9	8.0	118.0
<i>Mississippi:</i>									
Vicksburg	61.06	50.4	66.0	80.8	65.5	65.7	101.0	10.0	124.0
<i>Louisiana:</i>									
New Orleans	64.29	56.0	69.0	81.9	69.9	69.4	97.0	20.0	111.9
Shreveport	53.62	48.9	66.1	81.9	65.2	65.7	107.0	6.0	126.1
<i>Arkansas:</i>									
Fort Smith	45.80	37.7	59.4	77.7	62.8	59.5	104.5	*5.0	128.4
Little Rock	59.27	45.3	62.3	78.8	63.1	62.3	102.0	5.5	146.6
<i>Tennessee:</i>									
Chattanooga	59.85	44.2	60.1	76.2	61.3	60.4	101.0	*1.0	117.3
Knoxville	53.88	39.7	57.2	74.8	57.7	57.5	100.0	*16.0	117.4
Memphis	55.97	42.7	61.3	79.5	60.9	61.2	102.0	*2.0	124.3
Nashville	52.10	41.2	59.7	78.5	59.7	59.8	104.0	*10.0	100.9
<i>Kentucky:</i>									
Louisville	48.53	37.2	55.7	76.7	57.6	57.0	104.6	*19.0	104.3
<i>Missouri:</i>									
St. Louis	37.73	34.1	54.7	76.7	56.3	55.4	106.4	*21.0	119.1
<i>Texas:</i>									
Galveston	53.01	55.5	69.9	83.5	71.4	70.2	98.5	18.0	124.6
Indianola	37.62	55.6	70.4	82.8	71.5	70.1	100.0	14.0	124.2
Palestine	50.11	48.6	65.5	79.9	67.1	65.0	98.2	6.5	129.8
Brownsville	32.93	60.4	74.3	83.5	73.6	72.8	102.0	18.0	119.5
Rio Grande City	21.98	60.3	76.0	85.2	73.3	73.4	112.0	19.0	156.1
Fort Elliott	23.81	33.7	54.8	74.4	55.4	54.6	102.0	*12.0	183.8
Fort Concho	30.11	45.6	65.1	80.7	63.2	63.6	110.0	*1.0	162.7
Fort Davis	20.33	45.5	61.3	74.0	59.3	59.8	111.0	Zero.	199.2
Fort Stockton	19.21	46.0	64.3	79.2	62.0	62.8	107.4	2.0	203.0
El Paso	12.50	47.2	64.0	80.6	62.2	63.2	113.0	*5.0	223.6

* Below zero.

ARIZONA, CALIFORNIA, OREGON, AND WASHINGTON TERRITORY—MEAN AVERAGE TEMPERATURE, CLEAR DAYS, AND RAINFALL.

STATES AND STATIONS.	Average Rain- fall	Average Winter Temperature	Average Spring Temperature	Average Summer Temperature	Average Fall Temperature	Average Annual Temperature	Highest Tem- perature	Lowest Tem- perature	Average Annual No. Clear Days
<i>Arizona Territory:</i>									
Fort Apache	23.70	36.1	50.5	69.6	52.4	52.0	102.5	*9.0	207.5
Fort Grant	16.91	44.4	58.7	76.2	60.9	60.0	103.0	10.0	203.5
Prescott	15.40	35.4	49.4	69.7	52.2	52.1	103.0	*18.0	234.8
Camp Thomas	11.73	43.4	60.4	80.7	60.1	61.4	112.5	10.0	204.3
Yuma	2.53	56.1	70.2	89.6	73.9	72.0	118.0	22.0	279.9
<i>California:</i>									
San Diego	10.81	54.6	58.1	66.8	62.6	60.5	101.0	32.0	122.3
Los Angeles	17.95	53.6	58.4	67.8	62.7	60.5	108.0	28.0	171.3
San Francisco	24.11	51.3	54.6	58.5	58.2	55.7	95.2	33.0	146.7
Sacramento	19.94	48.3	59.5	71.7	61.5	60.2	106.0	19.0	240.0
Red Bluff	27.45	46.8	59.8	79.7	63.2	62.4	110.5	19.0	227.7
Cape Mendocino	18.50	46.7	49.1	54.5	53.9	51.2	90.0	28.5	165.0
<i>Oregon:</i>									
Roseburg	35.48	41.0	51.2	64.1	51.7	51.9	97.2	3.3	103.4
Portland	52.99	40.6	51.6	64.4	52.8	52.4	99.0	3.0	87.3
<i>Washington Territory:</i>									
Olympia	59.14	38.8	48.5	60.7	49.4	49.2	95.0	2.0	64.1
Fort Canby	45.98	40.4	49.3	58.2	52.8	50.2	90.3	16.0	101.6

* Below zero.

AVERAGE CALIFORNIA, OREGON, AND WASHINGTON TERRITORY WEATHER.

AVERAGE PRESSURE, TEMPERATURE, DEW POINT, RELATIVE HUMIDITY, PRECIPITATION, ANNUAL VELOCITY, HOURLY VELOCITY, PREVAILING WIND DIRECTION, CLEAR, FAIR, AND CLOUDY DAYS, WITH HIGHEST AND LOWEST TEMPERATURE.

The following complete statistics of the meteorological condition of the Pacific Coast States, as recorded at each Signal Service Station, have been taken from the annual report of the Chief Signal Officer. The averages are for periods of from seven to ten years. The barometer readings are corrected for temperature and instrumental error only, and not for elevation:

STATES AND STATIONS.	Elevation of Barometer. Feet.	Average Annual Barometer. Corrected for Temp. and Instr. Error only.	Average Annual Temperature.	Average Annual Dew Point.	Average Annual Humidity Percentage.	Average Annual Rainfall.	Average Annual Velocity Wind. Miles.
<i>California:</i>							
San Diego	67	29.935	60.5	50.6	72.7	10.88	52.327
Los Angeles	371	29.641	60.5	48.6	67.1	18.25	45.290
San Francisco	60	29.981	55.7	47.5	74.8	24.03	82.092
Sacramento	64	29.994	60.2	47.2	64.8	23.57	57.061
Red Bluff	332	29.648	62.4	42.3	54.5	28.24	60.637
Cape Mendocino	637	29.334	51.2	-----	82.4	17.99	-----
<i>Oregon:</i>							
Roseburg	523	29.519	51.9	42.5	73.5	35.75	27.286
Portland	67	29.991	52.4	42.4	72.4	53.38	40.879
<i>Washington Territory:</i>							
Fort Canby	179	29.813	49.9	-----	84.5	-----	89.779
Olympia	36	30.010	49.2	41.8	78.4	56.27	32.832
Tatoosh Island	86	29.896	47.8	-----	85.6	-----	105.496
Spokane Falls	1,906	27.984	46.2	34.6	68.4	20.31	38.956
Dayton	1,667	28.284	48.2	35.6	67.3	27.77	46.224
	Average Hourly Velocity Wind. Miles.	Prevailing Direction Wind.	Average Clear Days.	Average Fair Days.	Average Cloudy Days.	Highest Temperature.	Lowest Temperature.
<i>California:</i>							
San Diego	6.0	W.	122.3	157.6	85.4	101	32
Los Angeles	5.2	W.	171.3	142.4	51.6	108	28
San Francisco	9.3	S.W.	146.7	139.0	79.6	95	33
Sacramento	6.3	S.	240.0	74.9	50.4	106	19
Red Bluff	7.1	N. & S.	227.7	81.7	55.3	110	19
Cape Mendocino	17.4	N.W.	165.0	132.5	68.0	90	28
<i>Oregon:</i>							
Roseburg	3.0	N.W.	103.4	125.8	136.1	97	3
Portland	4.7	S.	87.3	103.1	174.9	99	*2
<i>Washington Territory:</i>							
Fort Canby	10.1	W.	101.6	158.8	105.6	90	16
Olympia	3.8	S.	64.1	127.9	173.3	95	2
Tatoosh Island	11.9	E.	81.0	128.0	157.0	-----	-----
Spokane Falls	4.6	S.W.	129.3	137.3	98.7	102	*26
Dayton	5.3	S.W.	127.4	136.8	101.2	102	*28

* Below zero.

AVERAGE PREVAILING DIRECTION OF WIND FOR EACH MONTH.

The following table shows the average direction for each month from which the prevailing winds have been observed to blow. The averages are obtained from seven to thirteen years of observations and are for each Signal Service Station on the Pacific Coast. This information is from the annual report of the Chief Signal Officer:

STATES AND STATIONS.	January.	February.	March.	April.	May.	June.
<i>California:</i>						
San Diego.....	N.E.	N.W.	W.	W.	W.	W.
Los Angeles.....	N.E.	N.E.	W.	W.	W.	W.
San Francisco.....	N.	W.	W.	W.	W.	S.W.
Sacramento.....	S.E.	S.E.	S.	S.	S.W.	S.
Red Bluff.....	N.	N.	S.	S.	S.	S.
Cape Mendocino.....	N.W.	N.W.	S.E.	N.W.	N.W.	N.W.
<i>Oregon:</i>						
Roseburg.....	S.W.	N.W.	S.W.	N.W.	N.W.	N.
Portland.....	S.	S.	S.	S.	N.W.	N.W.
<i>Washington Territory:</i>						
Fort Canby.....	E.	N.	W.	W.	W.	W.
Olympia.....	S.	S.	S.	S.	S.	N. & S.W.
Tatoosh Island.....	E.	E.	E.	E.	S.W., W.	S.W.
Spokane Falls.....	N.E., S.W.	S.W.	S.W.	S.W.	S.W.	S.W.
Dayton.....	S.W.	S.W.	S.W.	S.W.	S.W.	S.W.
<i>Nevada:</i>						
Winnemucca.....	S.W.	S.W.	S.W.	S.W.	S.W.	S.W.
Carson City.....	S.W.	N.W.	S.W.	S.W.	S.W.	S.W.
	July.	August.	September.	October.	November.	December.
<i>California:</i>						
San Diego.....	W.	W.	N.W.	N.W.	N.W.	N.E.
Los Angeles.....	W.	W.	W.	W.	N.E.	N.E.
San Francisco.....	S.W.	S.W.	S.W.	S.W.	N.W.	N.
Sacramento.....	S.	S.	S.	S.	N.	S.E.
Red Bluff.....	S.	S.	N.	N.	N.	N.
Cape Mendocino.....	N.W.	N.	N.	N.	S.E.	N.W.
<i>Oregon:</i>						
Roseburg.....	N.	N.	N.W.	N.W.	S.W.	S.W.
Portland.....	N.W.	N.W.	N.W.	S.	S.	S.
<i>Washington Territory:</i>						
Fort Canby.....	W.	W.	S.	S.	S.	S.E.
Olympia.....	N.	N.	S.	S.	S.	S.
Tatoosh Island.....	S.W.	S.W.	E.	E.	E.	E.
Spokane Falls.....	S.W.	S.W.	S.W.	S.W.	N.E.	S.W.
Dayton.....	S.W.	S.W.	S.W.	S.W.	S.W.	S.W.
<i>Nevada:</i>						
Winnemucca.....	S.W.	S.W.	S.W.	S.W.	N.E.	N.E.
Carson City.....	S.W.	S.W.	N.W.	N.W.	S.W.	S.W.

FOREIGN TEMPERATURE, by Sir James Clark, with Palermo, Algiers, and Mentone, added to the table by Dr. Henry Bennet, from whose work, "Winter and Spring on the Shores of the Mediterranean," the following table was taken.

NAMES OF PLACES.	MEAN TEMPERATURE OF MONTHS.												Mean Annual Temperature.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
Cairo	58.1	56.1	64.6	77.9	78.3	83.7	85.8	85.8	79.2	72.3	63.0	61.3	72.2
Santa Cruz (Canaries)	63.8	64.3	67.2	72.7	72.1	73.4	77.3	78.9	77.4	74.7	70.4	65.8	70.9
Ceylon (Hill District)	69.2	66.5	70.8	72.7	71.4	69.4	69.8	68.9	70.8	70.9	70.6	69.7	71.3
Malta	56.5	56.3	58.1	61.8	66.4	73.8	79.6	81.2	77.8	71.1	64.2	59.6	62.8
Corfu	52.6	51.8	54.6	58.3	66.7	72.3	77.7	81.3	78.3	70.8	63.8	58.4	67.3
Madeira	59.7	60.3	61.9	62.0	63.4	66.9	70.0	71.9	71.3	66.8	64.0	61.4	65.6
Palermo													65.0
Algiers													67.3
Port Jackson (N. S. W.)													64.4
Cadiz	61.7	71.6	69.6	64.0	59.7	54.9	53.9	55.3	59.3	63.5	67.7	69.2	64.0
St. Michael's (Azores)	51.4	53.7	55.2	59.6	63.8	68.2	70.3	72.9	70.2	67.1	58.8	54.6	62.9
Naples	59.0	59.0	59.5	61.0	63.0	67.0	68.0	70.0	68.0	63.0	56.0	55.6	62.9
Mentone	46.5	48.5	52.0	57.0	66.5	71.0	75.0	76.5	72.5	65.0	54.5	50.5	62.4
*San Remo	47.2	50.2	52.0	57.2	63.0	70.0	75.0	75.0	72.5	65.0	54.5	50.5	61.4
Rome	47.6	49.4	52.0	57.0	62.9	69.2	74.3	73.8	70.6	61.8	53.3	49.3	60.8
Pisa	44.0	48.1	51.5	56.3	64.5	69.2	73.3	74.0	69.5	63.6	58.8	49.6	60.2
Genoa	41.6	47.5	51.1	60.3	64.4	73.5	75.1	76.5	73.2	64.7	51.0	45.6	60.7
Toulon	40.0	44.0	48.0	55.0	68.0	70.0	74.0	79.0	64.0	62.0	51.0	46.0	60.4
Marseilles	54.8	45.1	49.1										59.9
Nice	45.8	49.0	51.4										59.5
Florence	41.0	45.0	48.0	56.0	63.0	69.0	73.6	74.3	69.4	61.8	53.7	48.6	59.5
Port Philip (N. S. W.)	67.6	68.9	65.7	58.6	55.6	50.9	49.2	50.1	54.5	58.2	62.5	65.9	59.0
Auckland (N. Z.)	67.9	67.3	64.2	60.5	54.7	51.4	49.0	51.7	54.0	56.4	60.1	63.9	59.0
Avignon	42.0	43.5	50.5	55.0	66.0	72.0	76.0	76.0	67.0	60.0	50.0	43.3	58.4
Montpelier	42.0	45.0	47.0	53.0	60.0	67.0	72.0	75.0	71.0	61.0	52.0	46.0	58.2
Pau	41.2	43.6	48.8	51.8	61.6	68.2	70.6	73.4	67.4	58.2	46.6	42.8	57.6
Sienna	39.7	40.2	46.2	53.7	62.4	67.5	72.8	72.3	66.0	58.3	47.1	41.7	56.2
Baths of Lucca				53.0	60.5	63.0	70.0	71.5	66.0				55.6
Paris	35.6	40.5	43.5	49.6	58.1	62.5	65.7	65.2	60.4	52.4	44.2	39.2	55.0
*Cannes													51.5
*Valencia													51.4
*Gibraltar													59.9
*Lisbon													63.8
*Mexico													61.0
*Jerusalem	49.4	54.4	55.7	61.4	73.8	75.2	79.1	79.3	77.0	74.2	63.8	54.5	60.6
													60.5

*Added to the table by Sergeant Barwick.

SAN REMO, ITALY.

Mean monthly, yearly, and seasonal temperature of San Remo, Italy, as obtained from the work by Hassel, entitled "San Remo and the Western Riviera of Italy:"

MONTHS.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	Average Monthly Tem- perature for nine years.
January -----	49.2	47.8	46.4	46.2	45.5	44.8	49.2	50.5	45.3	47.2
February -----	53.4	50.9	49.8	51.7	50.0	49.6	51.4	48.4	46.5	50.2
March -----	52.4	52.5	51.1	48.5	52.0	53.2	53.9	55.8	48.6	52.0
April -----	56.0	58.0	55.7	57.0	57.6	57.9	58.3	56.7	56.0	57.0
May -----	60.6	62.8	67.3	65.8	64.6	63.2	61.4	62.4	58.3	62.9
June -----	69.4	70.1	73.8	68.3	70.7	64.7	67.6	68.4	69.6	69.2
July -----	73.4	72.1	75.2	76.1	75.6	71.5	74.0	76.5	74.6	74.3
August -----	70.3	73.2	76.6	74.2	74.0	73.6	74.0	77.4	71.3	73.8
September -----	69.0	70.6	70.0	72.4	72.5	72.2	69.9	68.9	69.7	70.6
October -----	66.9	60.5	63.4	61.6	62.3	62.1	62.6	59.6	5.73	61.8
November -----	52.4	52.4	53.0	53.0	54.5	52.8	55.6	52.9	-----	*53.3
December -----	50.8	46.4	53.2	50.4	45.7	44.3	52.8	50.6	-----	*49.3
Average annual temperature ----	59.7	59.6	61.3	60.4	60.4	59.2	60.9	60.7	-----	60.1

* Average for eight years.

SEASONAL AND ANNUAL AVERAGE TEMPERATURE AT SAN REMO, ITALY.

YEARS.	Average Win- ter Tempe- rature.	Average Spring Tem- perature.	Average Sum- mer Temper- ature.	Average Autumn Tem- perature.	Average An- nual Temper- ature.
1865-66 -----	20.6	56.3	71.0	62.8	60.2
1866-67 -----	49.8	57.8	71.8	61.2	60.2
1867-68 -----	47.5	58.0	75.2	62.1	60.7
1868-69 -----	20.4	57.1	72.8	62.3	60.7
1869-70 -----	48.6	58.0	73.4	63.1	60.8
1870-71 -----	46.7	58.1	69.9	62.4	59.3
1871-72 -----	48.3	57.9	71.9	62.7	60.2
1872-73 -----	50.6	58.3	74.1	60.4	60.9
1873-74 -----	47.5	54.3	71.8	59.7	58.4
Average for nine years ----	48.9	57.3	72.4	61.8	60.2

A TREATISE ON OLIVE CULTURE.

By ELLWOOD COOPER, of Santa Barbara.

ARTICLE I.—PROPAGATION.

The common and preferred method is to plant the cuttings, taken from the growing trees of sound wood, from three quarters of an inch in diameter, to one and a half inches, and from fourteen to sixteen inches long. These cuttings should be taken from the trees during the months of December and January, neatly trimmed without bruising, and carefully trenched in loose sandy soil. A shady place preferred. They should be planted in permanent sites from February twentieth to March twentieth, depending upon the season. The ground should be well prepared and sufficiently dry so that there is no mud, and the weather warm. In Santa Barbara near the coast no irrigation is necessary; but very frequent stirring of the top soil with a hoe or iron rake for a considerable distance around the cuttings is necessary during the spring and summer. About three fourths of all that are well planted will grow. My plan is to set them twenty feet apart each way, and place them in the ground butt end down, and at an angle of about forty-five degrees, the top to the north, barely covered. Mark the place with a stake. By planting them obliquely, the bottom end will be from ten inches to one foot below the surface. In Europe the trees are planted from twenty-seven to thirty-three feet apart. My reasons for closer planting will be given in a subsequent article.

All trees, as a rule, should be propagated from seeds. The roots are more symmetrical, the tree not so liable to be blown over, and the growth more healthful; but I have not been successful in germinating them, hence, I recommend the cutting. If the trees are propagated from seeds, budding or grafting is necessary. I have seen the statement that it was necessary that the seeds should pass through the stomachs of birds before they could be sprouted; also that by soaking in strong lye the sprouting would be secured. I have not seen the result of either experiment, and accept the statement with more or less distrust. I presume cuttings can be obtained from any of the Mission orchards in the southern counties.

ARTICLE II.—PRUNING.

The cutting will throw up numerous shoots or sprouts, all of which should be left to grow the first year; any disturbance of the top affects the growth of the roots. It would be advisable, however, where there are two or more vigorous shoots of about the same size and height from the same cutting, to pinch the tops off all excepting the one to be left for the future tree, so as to throw more force and vigor into that one. In the following spring, when the ground is warm and sufficiently dry, all sprouts excepting the one to be preserved, should be carefully removed, cutting them off close to the cutting. The top end of the cutting should also be removed by the aid of a sharp saw. A post should be firmly planted, so that the tree can be well secured, to keep the trunk straight, and avoid any disturbance of the roots, and should be kept until the tree is four or five years old. By adopting this method a great deal of time will be saved, and better trees secured. The lateral branches should be allowed to grow until the tree is two or three

years old; but in every case when any of said branches are rapidly making wood, they should be removed, and not allowed to rob the trunk.

In the pruning during the first years, have only the one object in view, that is, to force all the woody growth into one main trunk. This being done the tree will naturally form a beautiful shape. The cultivator must not look at the tree of to-day or to-morrow, but the tree of ten years hence. All branches to the height of five to five and a half feet should be removed, so as to admit of close cultivating by horses. Trees planted at the distance of twenty feet, and well kept, will in ten years touch each other. When this condition is reached they will be in full bearing, and therefore will require constant pruning or cutting back. It is much easier and less expensive to gather the fruit from small trees; besides, if the pruning is intelligently done, it will improve the fruit and secure a greater quantity to the acre than can be produced under any other conditions.

Some orchards in Europe are planted in "threes," that is, three trees in each place planted in the form of a triangle, and three or four feet apart. This method would require the rows to be thirty-three to thirty-five feet distant, and would give about the same number of trees to the acre, as by planting at twenty feet, one tree in each place. It is claimed that by planting in this way no staking is required, the trees protect one another from the most violent wind storms, the trimming is simplified, and less care and labor required in the cultivation.

ARTICLE III.—FRUIT BEARING.

Trees growing from cuttings will produce fruit the fourth year, and sometimes, under the most favorable circumstances, will give a few berries the third year. It is the habit of the tree to overbear, and as a consequence will give but little fruit the year following a heavy crop. This statement is verified by the most reliable books published on the subject in the French, Italian, and Spanish languages. There are, however, exceptions to this rule in California. Mr. Davis, who had charge of the San Diego Mission orchard in 1875, assured me that he had gathered from the same tree, two years in succession, over one hundred and fifty gallons of berries. I have also observed that some trees in my orchards have borne well successive years. The fruit bearing can be controlled by the pruning. The cultivator will not forget that the shoots or branches must be two years old before they will give fruit, hence, partial pruning every year, will give partial crops. My oldest orchard was planted February 21, 1872. At four years I gathered from some of the trees over two gallons of berries. In 1878 over thirty gallons each off a few of the best trees, the orchard then being only six years old. In 1879, the seventh year, the crop was not nearly so large. I had planted several thousand cuttings in the spring of 1873, but these trees did not give at six years, a result equal to the first planting. The present crop (1880) is quite good; the oldest orchard now being eight years, and I think I do not overestimate, when I state that the yield of some of the best and fullest trees will be over forty gallons. Trees large enough to give this quantity of fruit, planted at a distance of twenty feet, will occupy nearly all the ground, and therefore will give all the fruit that can be produced on one acre. An orchard bearing uniformly the quantity as above, would give the following result: one hundred trees to the acre at forty gallons each, four thousand gallons. This would be an enormous crop, unprecedented, and far beyond any statistics given in European publications. The one fourth of the quantity yearly would be a very profitable crop.

In estimating an orchard, the yield of isolated trees, or trees of great age, occupying considerable areas of ground, must not enter into the basis of calculation of the probable production. The tree mentioned in the San Diego Mission orchard as yielding one hundred and fifty gallons of berries was more than fifty feet distant from those surrounding it.

My agent while traveling in Europe through the olive districts, measured a tree growing in the "Alpes Maritimes" that was eight feet in diameter six feet above the ground, and at the ground fifteen feet in diameter. Only a few trees of such size could be grown on one acre.

A. Coutance, *Professeur des Sciences Naturelles aux Ecoles de Medecine de la Marine* of France, compiled a very exhaustive work on the olive, published in Paris, in 1877, from which I copy and translate as follows: "Large olive trees occupy one thousand square feet of ground—that is, require to be distant from each other about thirty-three feet; will produce every second year thirty-seven gallons of berries, and occasionally as much as one hundred and twenty-five to one hundred and fifty gallons. One tree, nine years old and nine inches in diameter, will produce sixteen and one fifth gallons; one twelve inches in diameter, twenty-four gallons. The measurement and number of trees occupying one hectare (two and a half acres) is given as follows: fifteen trees twelve inches in diameter; seventy-five trees nine inches in diameter; sixty trees five inches in diameter; total, one hundred and fifty trees. Product of the same, three thousand gallons of berries." This would be equal to one thousand two hundred gallons to the acre. Another authority gives two thousand two hundred and fifty gallons per hectare. Still another gives two thousand one hundred and fifty. All of the above results once in two years. Several authorities quoted by the same author reckon two hundred trees to each hectare. This would be eighty trees to the acre, and distant apart twenty-three and one half feet. French cultivators give the quantity of oil contained in a given quantity of fruit as one eighth, and in weight one tenth; that is, eight gallons of berries to one gallon of oil, and about fifty pounds of berries to one gallon of oil. Taking the average quantity of the production as given above, from a mature orchard, we have in oil, per tree, two to two and a half gallons every second year. This result is obtained by thorough fertilizing, without which the berries would yield but little oil.

Olive trees grown from seeds are not removed from the nursery until about seven years old; grown from cuttings, they bear in Europe as early as they do in California.

The newness and richness of our soil will probably give, the first fifty years, double the best results given in those countries where oil making has been the business for so many generations. Our climate is congenial to the habit of the tree; it blooms from the first to the tenth of May, and the fruit forms from the first to the tenth of June. At this season we have our best weather, free from extremes of either cold or heat. Nowhere in the world are all the conditions so favorable to the perfect fruit-bearing.

ARTICLE IV.—FRUIT PICKING.

The olive usually ripens in November. In some localities in eastern countries, during favorable years, the fruit picking for oil begins as early as October, and for pickling, in September. In Santa Barbara, the crop of last year (1880), as also that of 1878, was unusually late in ripening, not being ready to pick before the middle of January—a delay of fully two months—the cause no doubt owing to the extraordinary rainfall of these two years. In 1878 we had after the middle of February, and up to the

middle of April, a rainfall of over fourteen inches, and in 1880 over eighteen inches, being more than our yearly average.

The fruit should be gathered as soon as it turns purple, and before fully ripe, as the oil will be lighter in color and more fragrant, but somewhat less in quantity.

In Europe the common method of gathering the berries is to knock them from the trees with poles; they are then picked from the ground by old men, women, children, and cripples. This plan has serious objections, the fruit being more or less bruised, causing decomposition, and the contact with the earth is liable to give the oil an unpleasant taste and odor. The more economical plan of gathering, is to pick from the trees by hand; and by the aid of intelligent contrivances, an active man can pick four hundred pounds each day.

I have arranged on a ranch wagon, platforms with ladders securely fastened, so that the fruit from the different heights of even large trees can be gathered from the wagon, which is driven along the rows, and one half of the trees picked from each side. This plan obviates the necessity of moving ladders, climbing, etc., and relieves the pickers from the labor of carrying the fruit, as the sacks containing the same are always at hand on the platform. The leaves and imperfect berries are separated by passing the whole through a winnowing mill. This process leaves the fruit in the best possible condition, preparatory to manufacturing the oil.

ARTICLE V.—MAKING OIL.

The berries are dried before crushing, as it is necessary to evaporate a portion of the water. If, however, they are left out on the trees until shrivelled, which is proof that necessary evaporation has already taken place, no drying is needed after picking. This late picking is not best, as mentioned in a previous article. If dried by the sun it requires about fourteen days. This plan cannot be depended upon, excepting years when the fruit is early ripe, and we have continuous sunlight, with moderately warm weather. By artificial heat ranging from 110° to 130° , the drying can be done in less than forty-eight hours. The crushing and pressing should follow without delay—that is, the fruit taken from the drier in the morning should be crushed and pressed the same day. Long intervals or delays in the process from picking the fruit to expressing the oil tends to rancidity. To make perfect oil requires a perfect system in the whole management. The capacity of the press, the crusher, the drier, and the number of pickers should correspond or be about equal; all fruit picked during the day should be in at night, cleaned the following morning, and go into the drier immediately after the previous day's drying is taken out. The heat or temperature of the drier ought to be so graded as to complete the work in forty-eight hours, and it is better that it should be under 130° rather than above. Economy will necessitate in the business a system in the different branches of the process admitting of no delays from the beginning to the end.

My drier has a capacity of five hundred square feet of surface, and will contain at one time over two thousand pounds of olives, equal to five pickers of four hundred pounds each per day, and as much as the crusher and press I am now using can work.

The almost universal method of crushing the berries is by a heavy stone, similar to a millstone, which is rolled around on the edge in a deep circular groove or trough, and by its weight does the crushing. A beam passing through the eye of the stone, and working on a journal in the center of the circle with a horse attached to the outer end of the beam, is the simplest

way to do the work, and the plan that I have adopted. The circumference of the trough depends somewhat on the size of the stone. The one I am using is four feet high, six inches thick, and the diameter of the trough in which it works, six feet; the length of the beam fifteen feet. This crusher is amply sufficient for an orchard of one thousand trees, but too small for my purpose. It cost about \$50.

A stone five feet in diameter and two feet thick would crush in eight hours a sufficient quantity of berries to make one hundred gallons of oil, and by working it night and day, the crop of ten thousand trees. It would be better, however, to have two stones half the thickness of the above, one following the other in the same groove. The horse should work on the outside of the building containing the crusher.

To make one hundred gallons of oil each day would require two good presses. The one best adapted for the purpose, so far as I have seen, is that used for making oleomargarine. Such presses could, with very little expense, be worked by the horse power used for crushing the berries, so that one man could do all the crushing and pressing.

The press I am using is an old fashioned wooden beam press, such as used in the New England and Middle States for making cider. The beam is twenty-six feet long, and with a heavy box filled with rock suspended at the extreme end, the power can be increased to one hundred and fifty tons. The press with the differential pulleys costs about \$150. Such a press cannot be improved upon for expressing the oil, but the additional labor, and the time lost in changing, is so much greater than what would be required for the oleomargarine invention, that the latter would facilitate the work, and be cheaper in the end, besides taking up so much less room.

The crushed olives are put in the press in cheeses about three feet square and three inches thick, with wooden slats between each cheese. Ten or more cheeses can be put in at each pressing. I use coarse linen cloth to contain the crushed olives.

The fluid that is expressed is put in large tanks and left for sixty to ninety days, when the oil will separate, and, being lighter, will rise to the top, where it can be drawn off. The pomace, after the first pressing, is recrushed, and by pouring hot water over it, a second quality of oil is expressed. The refuse can then be used either for fuel, for feed for pigs, or for making still a third quality of oil; if for the latter, it is thrown in vats, boiling water poured over it, and left to ferment, when the oil still remaining will be liberated and rise to the top.

ARTICLE VI.—FILTERING AND CLARIFYING.

This is a simple process. The most common method is to have a series of five or six boxes, one above the other, each with cotton batting in the bottom; the oil passing the sixth will be beautifully clear and ready for market. I use cylindrical tin vessels holding about three gallons each, one fitting in the other in tiers of three, with fine wire sieves in the bottom of each. On these sieves I place two or three layers of cotton batting. The oil is passed from one tier to the other until clear. The clarifying can be done by the sunlight; also, it can be bleached and made much lighter in color, but not without injuring it. When it is adulterated, artificial heat is necessary in the process. When once heated it loses a part of the nutty flavor, and is liable to become rancid when exposed to the air. It should be kept in an ordinarily cool place, not exposed to sunlight or heat, neither should it be handled any more than is absolutely necessary in the filtering and bottling, and should not be shaken after bottling. The mucil-

age contained in the oil will not separate for a long time after the oil is ready for use, and, as it does not injure it, is not, therefore, objectionable. It will sometimes form in the bottles like globules of water, or in films, settling to the bottom as sediment, and when shaken will give it a muddy appearance, which, with the common prejudice against all table oils that are not perfectly clear, renders it unsalable, as consumers consult more the eye than the taste. The oil is better when new and fresh, and what is gained in the appearance by its remaining a longer time in the tank, is more than lost in its freshness and delicacy of flavor.

To sum up the cost of the machinery in the making of the oil, we have as follows: Drier, \$150; mill, \$250; two presses, \$500; two tanks, \$200; filterers, \$50; corker, tin foiler, \$50; wooden building, \$400. Total, \$1,600.

ARTICLE VII.—PICKLING.

There are different methods of preparing the fruit for pickles. The one adopted in this locality is as follows: "The berries are put in fresh water, which should be changed every day, for forty or fifty days, then put in salt brine, not very strong, and after remaining a few days, drawn off, a second brine substituted, made nearly strong enough to bear an egg. The water should be boiled. Keep the olives well covered with the brine. Great care should be taken in handling the berries so as not to bruise them. The easiest plan when picking from the tree is to drop them in water. They are usually picked when they begin to turn a purplish color."

Another method, copied from the "Pacific Rural Press:" "Pick the olives as soon as they begin to show a reddish cast, and rinse them in clean water. Then take one ounce of concentrated lye and dissolve it in water. One third of this solution put in water enough to cover one gallon of olives. After a day or two pour off this water and add another lye of the same strength. This may be repeated once more, as five or six days are consumed in taking out the bitterness with the lye. The lye should be used until the fruit suits the taste. Then the olives are put in pure fresh water until the alkali is well removed. This can be ascertained by the color of the water and by the taste. In salting, use the best Liverpool 'coarse fine' salt, the amount being about ten pounds to the barrel of olives, water enough being used to cover the fruit. Barrel up tight and keep in a cool place. All the process should be conducted in the dark, as the light is apt to injure the color."

Still another method, which I have copied from the work of Prof. A. Coutance, and translate as follows: "Take green olives, and after having bruised or broken them slightly, soak in water for nine days, changing the water each day. At the end of this time they will have lost their bitter taste and can then be put in brine. Hot water acts more rapidly."

"The celebrated olives pickled after the *manner of Picholini* are put under a treatment of lye made more alkaline by the addition of quicklime. After leaving the olives a certain length of time until the pulp separates easily from the seed, a condition which depends upon the strength of the lye and the size of the olives, they are then washed and put in strong brine." "In the south they flavor with fennel and coriander; sometimes they substitute in place of the seed a small piece of *anchovy* and a *caper*. In the latter case the olives should be in oil."

ARTICLE VIII.—DISEASES.

My attention was called, as early as 1874, to the condition of the trees in and around Santa Barbara from the ravages of the "*Coccus oleæ*," commonly known as the "black scale," and which was always followed by the black fungus. In 1875 I visited the orchards of San Diego, San Gabriel, San Buenaventura, and Santa Barbara, and in 1876 San Luis Obispo. At the latter place I learned from the mission fathers, through the late Hon. Judge Murray, that the disease had appeared about fourteen years before that date, fixing the date of its appearance in California at about 1862. Prior to that time they had had uninterrupted success with their olive trees. These examinations, very carefully made, determined in my mind one of two alternatives, either to keep the trees free from the scale bug, or root them out. I chose the former, and have been fighting it without any cessation ever since. I believe all my olive trees are clean, and are, at this writing, loaded with a beautiful fruit crop.

An olive tree once attacked with the scale bug, unless cleaned, will soon be infested so that it cannot bear fruit. Such fruit as is borne during the period of rapid increase of the insect will not make oil. There are trees enough in the southern part of the State, if properly cleaned and cared for, to produce many thousands of gallons of oil, while, with a few exceptional orchards, I do not believe one single gallon could be made. This is the condition everywhere where the insect is prevalent. The attack is fatal, unless it is at once destroyed, and it is useless for any orchardist to fortify himself behind theories that something will turn up to counteract the ravages, or that the ants will destroy them, or that some enemy or parasite will appear to do the work which he cannot escape. The whole business will be bankrupted by anything short of total annihilation of the insect. In some districts on the northern coast of the Mediterranean the spread of this insect has become so alarming that the question of abandonment is contemplated. The ravages have baffled the efforts of their wisest men. To give some idea of the rapidity with which it will spread, I quote from a very interesting treatise—a pamphlet of ninety pages, written by Alfred Lejourdan, agricultural engineer—published in Marseilles, in 1864, title "*Maladie Noire*." It is, in this work, estimated that one female "*Coccus*" will produce from two thousand to four thousand eggs. By one author, that one "*Coccus*," in five generations, will produce five billions ninety-four millions. By another, that ten generations are produced in one year, and allowing only one hundred as the reproduction of each, we will have at the end of the year, from one single female, one billion billion—fortunately for us, there are too many things contingent that prevents the possibility of such increase—high winds, birds, and insects of various kinds destroy the greater number; still, in favorable years, the rapidity with which they will spread will require our greatest energies and intelligence to counteract.

In a very exhaustive work on the olive, compiled by A. Coutance, Professor of Natural Science in the schools of medicine, published in Paris in 1877, it is claimed that the silence of authors on this malady, caused during a period of twenty years, great ravages. Let us not commit the same blunder, and if we are to foster the culture of the olive in this country, the valuable portions of such works as above mentioned, and of other books on the subject, should be translated into English and made accessible to all the cultivators where the olive can be grown.

The ravages of this insect are of quite recent date; Lejourdan states

that it appeared for the first time at Nice in 1743, and that Bernard wrote on the subject in 1783; that there were no other writers before that time.

That all the Roman authors of the first half of the eighteenth century were silent upon the subject. It was in 1783 that all the proprietors in some localities trimmed down their trees to mere trunks, in order to clean them and commence with new trees.

It is certain that a malady so characteristic with such a disagreeable aspect could not have escaped the observation of authors.

Abbe Coutoure presented a *memoire* to the Academy of Marseilles, about the same time that Bernard wrote, in which he declared that the *Coccus oleæ* was observed for the first time in 1781. Captain Cousin states that in 1861 this malady made terrible havoc in Kabylie (a part of Algeria), where the olive formed almost the only resource of the people. It was the more alarming because they could find no successful remedy. In Cousin's report, he makes the statement that the greater part of the Kabyles preferred to leave the trees without any effort to remove the insects or the black fungus, and that an orchard attacked would not give fruit before ten years; thus intimating that the disease would die out of itself in about that time. I have found in no other writings any intimation or possibility of the let-alone theory accomplishing the work.

Regarding the *Coccus* and the black fungus, there are various opinions; some contend that the black is caused by the humidity, and the want of ventilation and sunlight in the tree. This theory is accompanied by the statement that the black fungus is seen without any appearance of the *Coccus*; and that the *Coccus* is to be seen without any appearance of black fungus. Some that it is caused by the smoke from chimneys; others that it is caused by the northern winds carrying the sea air through the trees; others, still, that it emanated from the ground. But the principal and accepted theory is, that it is caused by the attack of the *Coccus*; the piercing of the bark of the limbs and twigs, by these little insects, causing the emanation of sap, or some substance from the tree, or from the insect, or both, which falls on the upper side of the leaves, as also on the trunk and branches, and produces the fungus.

In my examinations and observations I have never seen the black fungus unless preceded by the insect, and that where the tree was affected, the black was always on a lower level than where the insect was working; proving conclusively that the black was only a consequence of the insect work; and sometimes when there are comparatively few insects on a tree, it may be several months before there is any appearance of black.

When the fungus completely covers a tree, it is quite possible to destroy the insects, and the black will remain for a long time afterwards; in fact, when the trunk and branches or limbs are completely coated, it is very difficult to get it off; it becomes a paste and adheres as firmly as glue, and cannot be removed without the application of strong soap or some other substance equally powerful. It is my opinion, that with little care large districts could be kept free from this scale insect; I do not believe they would spread a distance of ten miles, unless carried on plants. Birds will spread them readily a distance of two miles.

In closing this part of the subject I lay down the following facts:

First.—That severe frosts will kill the insects, but the number of degrees and limit as to time through which the cold should be extended, and yet not do serious injury to the tree, is beyond my knowledge, for the reason that I have had no opportunity to extend my investigations.

Second.—That trees planted close to the sea will resist the attack better

than anywhere else. The cold sea winds evidently counteract the spread of the insect.

Third.—That high table land or plateaus will be easier to keep free from the insects than on bottom lands where there is more moisture in the soil, and generally more humidity in the atmosphere.

ARTICLE IX.—REMEDIES FOR THE DISEASES.

Pruning is the most essential thing and the remedy of the greatest vital importance. If trees are properly pruned, so as to admit of free circulation of air and the sunlight, more than half the battle is made: in fact, trees in such condition where the ground is well tilled and kept free from rubbish are not so liable to the attack, and if attacked each scale insect can readily be seen and should be removed without delay.

Orchardists who adopt this plan will have very little trouble, even in badly infected districts. A casual examination of several different parts of each orchard should be made as often as once a month. This can be done on horseback, or in a light wagon; and in the event of the appearance of scale insects, then a careful examination in that part, and a remedy applied to exterminate them. The insects will be found to inhabit that portion of the tree where the foliage is most dense, where the sunlight is shut out, and free circulation prevented. There is not so much in the remedy as in its application. While certain remedies may be effectual in the hands of some, in the hands of others they will not be sufficient. "Eternal vigilance is the price of success." Constant watching and constant fighting is the only sure plan to prevent the spread of insect pests in localities where trees are affected.

There are doubtless very many remedies that if properly applied would accomplish the work; and the expense would not be so great as to absorb the profits to be derived from the products of well-kept orchards. On young olive trees not badly affected, whale-oil soap can be applied with a stiff brush very successfully, and at cheap cost; but on large trees this plan is impracticable.

I find in French books, where the subject is treated at great length, numerous remedies advised, which I translate as follows: "Scraping off, powdered sulphur, petroleum, boiling water, lime water, hyposulphite of lime, wash with alkaline, smoking with coal tar." Also, "proper drainage, the tillage, removing rubbish, the lopping off of every useless twig are necessary precautions; the application is difficult and the success uncertain, where there are millions of insects." The pruning is of the greatest importance, and the orchardist who neglects this important part will find that the pests will resist all efforts at extermination."

In my correspondence several years ago with Professor J. E. Planchon, President of the Horticultural Society of Montpellier, France, the following was recommended: "Syringe the trees with a solution of sulphate of soda, and powder them immediately after with powdered lime—a caustic soda is then produced which destroys the insects." Bisulphide of carbon has been used with deadly effect on the most dangerous enemy to citrus fruit that was ever known. The cost is moderate, and the application not difficult, so that it should attract the attention of fruit growers as an insect destroyer.

The remedies that I have experimented with are whale-oil soap, a decoction of tobacco, phenyle, and pyroligneous acid.

First.—Whale-oil soap, as I have already stated, can be used effectually on small olive trees, at very cheap cost.

Second.—A decoction of tobacco is simple, inexpensive, and if properly applied, an effectual remedy for every class of insect pests that I have come in contact with. Forty pounds of good strong leaf tobacco, thoroughly boiled in water, will make about eighty gallons. This can be thrown upon the trees with a garden syringe, but it is necessary that the decoction should be kept, while using it, at the uniform temperature of 130°. Hotter than this will destroy the embryo fruit; less hot, less effectual. I would recommend four applications each year, until the orchards were entirely free from insects. Then, if the neighborhood was free, and proper precautions taken, with pruning alone, could be kept free for generations to come. Every orchardist must grow his own tobacco, which he can do in a small way, if he attends to it properly, at a cost of 2 cents the pound—one acre will produce four thousand pounds. We have, therefore, allowing two gallons of the decoction to a tree for each application, the following cost: one pound of tobacco, 2 cents. Two men can boil the tobacco and syringe one hundred trees daily—\$1 25 for each man, and board, would be \$2 50—or 2½ cents the tree, which, with the cost of tobacco (2 cents) equals per tree 4½ cents—four times each year, 18 cents. On olive trees producing fifty gallons of berries (valued at 4 cents the pound), the whole cost of thorough cleaning would be less than 2½ per cent of each yearly crop. On orange, lemon, and lime trees, about the same.

Third.—Phenyle. With this remedy my personal knowledge is limited; but from the experiments made by others, I am satisfied it has very valuable properties, and do not hesitate to recommend it. It costs \$1 50 per gallon—can be diluted with fifty parts of water to one part of phenyle, making the cost of the dilution for a tree wash only 3 cents each gallon.

Fourth.—Pyroligneous acid is probably more effectual than any other known remedy, but the present cost of 75 cents the gallon makes it too expensive for common use in syringing trees. It is my opinion that it can be manufactured for 10 cents the gallon, perhaps less, then diluted one half with water, would make the admixture cost 5 cents the gallon. The labor in applying either, in swabbing or syringing trees, is much less than with tobacco, as it does not require to be heated. The most important properties that any remedy can possess, provided that it has about the same insect destroying power, is that it should not be disagreeable to handle, no unsafety in keeping it in any place, and that it should not require to be heated to be effectual. If it is dangerous in itself, the orchardist will always be in dread; if it requires heating to a certain number of degrees, the many little necessary preparations will afford ample excuses for delays, or if it is exceedingly disagreeable to handle, the putting-off plan will always be resorted to, until dire necessity compels its use. This remedy is not disagreeable to handle, and can always be kept at hand and ready for use. It, therefore, recommends itself for universal application.

To sum up, it is my conviction, based upon the results of my experiments, that there is no excuse for not keeping olive trees free from scale insects. In fact, it is great economy to do so. It is a source from which to derive an income on the one hand, and total worthlessness on the other. Those who neglect this important duty, either from indifference or the want of knowledge, will expend their money only to see it melt away before them, and will have for their reward unsuccess, discouragement, and despair.

The following extract is from Mr. Cooper's address before the Horticultural Society, as reported in their biennial report for 1885 and 1886:

The remedy that I have finally adopted, as being the most effectual, is the application of kerosene oil, and as laid down on page 3 of the report of the Los Angeles convention, held one year ago.

I refer you to the discussions on this subject at the various conventions; also the reports of the State Board of Horticulture, and especially to the remedies recently recommended by B. M. Lelong, of Los Angeles.

To sum up: I copy from my report published in the last biennial report of the State Board, on page 50: "The olive is a rapid grower, and bears abundant crops. It would seem to be the tree of all others that should claim the attention of the people, and the planting be encouraged. There is, however, much yet to learn to enable the grower to keep his trees free from the black scale. No other tree seems to yield so readily to the attack. The increase is so rapid, and the insect so persistent, that it is yet a question whether in large areas, closely planted, it can be kept in check at a cost that the fruit will warrant."

MR. THOMPSON: I desire to ask the best varieties?

MR. COOPER: That is a question I cannot answer; all my experience is with the common Mission variety.

MR. WILCOX: We have several varieties in the nurseries of Santa Clara County that were exhibited at our fair this fall in pots that were bearing—several new varieties that were considered profitable. The old Mission kind we have at Santa Clara; have been planted there, perhaps, seventy-five years, and they have been bearing, and there they have made their own oil. We have an extensive plantation there up towards the hills, and they consider the old variety a good variety; nevertheless, they are experimenting with these new kinds.

MR. GRAY: I would ask if any pickles have been made as yet that will compare with the imported.

MR. COOPER: I have heard it stated that Mr. Del Valle, who has recently deceased, has put up some pickled olives that are far superior to anything that was ever imported into this country, and I think that the Kimball Brothers, in San Diego, have arrived at perfect success in pickling the Mission olive.

MR. HATCH: I would like to say that I have met different people who have been used to olives all their lives, and good olives, and who have said that they have eaten better olives, to their taste, at Frank Kimball's, in San Diego, than anywhere in the world.

ARTICLE X.—TRANSLATION.

[This chapter I have copied entire from the French of *Bertille*, being a history, culture, products, and the effect on the public health, etc., which I translate, as follows:]

The touching story of the flight of the dove from Noah's ark, related in Genesis, proves the existence of the olive tree in the earliest period of the world's history.

It was a celebrated tree among the ancients. It held the first rank in their mythology; Minerva taught the Athenians how to prepare the fruit, and they had a most religious respect for it. The oil was used mostly in religious ceremonies by the ancients. The Romans used the wood not only as fuel, but on the altars of their gods; it was the emblem of peace.

The olive tree transported from Egypt to Attica, belongs to the jasmine family, with evergreen foliage, small blossoms in clusters, and having some likeness to the elder tree flowering in June. It can be propagated in many ways, but the best way is by planting the seeds, and it is one which is practiced least. Except in damp soils where its roots rot, the olive grows everywhere. It accustoms itself to both dry and wet climates. Clay and mud are indifferent to it. Its long life is proverbial. In return it takes thirty years, a man's lifetime, before it reaches its full capacity for bearing fruit. Of this tree, one of the most valuable gifts of nature, there exists sixteen or seventeen species, all exotic. Its fruit is oval, fleshy, with a hard woody seed inclosing a kernel. The meat fine, and covered with a green skin before its maturity, softens and becomes a purplish black in ripening; it is then that they grind them in the mill, then put them in a press to extract the oil.

With some exceptions, one may say that in the Mediterranean Basin, from the thirty-fifth degree to the forty-third degree of latitude, is surrounded with a belt of olive trees. It is from this region that all Europe

receives its olive oil, for table use and for light. For either from some trouble in the growth, or some imperfection in the manufacture, perhaps both, the African Coast produces very inferior articles, which can only be used for lamp oil or grease.

Some of the islands of the Grecian Archipelago, and the western shore of the Adriatic, produce better oil, but destitute of sweetness and suppleness, qualities most desired by consumers, and only found in the oil made in the valleys south of the Alps. In the center of this region, extending from the promontory of Saint Tropez, in France, to Lavona, in Italy, in the gulf of Genoa, Nice is situated, whose reputation for the best oil has succeeded all other places in the world.

From the Var to the Roya, the valleys that surround it are protected from the north wind by the Alps. The temperature of the winter, which is the season the olive ripens, is the same as spring in the center of France.

This exceptional climate allows the fruit to reach its perfect ripeness, and together with the method of manufacturing gives the superiority which the oil of Nice, without question, has to-day over all other places. The annual production of this region is valued, on an average, of four or five million kilograms. The harvest begins in November, and lasts until April or May.

There is a crop every two years, and lack of rain and intense cold combine in killing the tree. There are many instances of olive trees being bitten by frost, and in this case the tree must be cut to the ground.

The uncertainty of the crops, and the biennial yield of fruit, cause the high prices of olive oil.

The olives gathered in the vicinity of Nice are all sent to the mill to be pressed into oil. They only pickle those that would not make good oil, and all of the olives we have on our table come from those regions where they do not ripen. The bitter taste they have in this State is destroyed by letting them soak in alkaline water: then by preserving them in brine seasoned with different herbs. By this preparation they become an aperient food, but less nourishing and less digestible.

One only needs to read a good cook-book to find in how many forms oil can be used—but success in the concoction of different dishes can only be obtained by the use of good oil. Failure in such dishes has been many times caused by rancid oil.

Rich in azote, and with considerable nutritive qualities, olive oil possesses, in the first place, the power of assimilating with the human body. It is instrumental in assisting in many medicinal cures where the method is cutaneous. It being more liquid than animal fat—always used for that purpose—it is easier to absorb. The injured parts, protected from the air by oily substances or salves, heal more quickly. These unctions give, besides, more suppleness and elasticity to the muscles. As it is not penetrated by the poisons in the atmosphere, it is used with success in counteracting the deleterious miasma around swampy districts. It ought to be greatly preferred for the hair to pomades, as it acts more quickly on the scalp. Taken daily, by the spoonful, it is an excellent laxative to the system, and not tiresome to the stomach.

It ought to be preferred as a medicine on account of its cheapness and pleasant taste, to those purgative powders so distasteful and expensive.

We read in history of the elasticity and vigor of the Grecians and Romans, and these qualities, without doubt, have been produced by the constant use of olive oil among those ancients. Unlike all animal fat that is injurious to the stomach and thins the blood, it assists the digestion and permits the body to develop correctly, and the brain to reach the highest

stage of human intelligence. Be that as it may, the beneficial effect that olive oil has, over human organism, cannot be disputed.

Originally only eaten where it was made, since the communication between all countries has become so much easier, this article of food is universally used. The most important thing is to get it pure. Unfortunately, on account of the cheapness of oils made from seeds and nuts of different kinds, commerce has adulterated olive oil as it has so many other articles. Oils made of peanuts, sesame, cotton, and poppy seeds, are sold by millions of kilogrammes under the name of olive oil.

This unwholesome adulteration, which can create the most serious disorders on the digestive organs, should be carefully avoided by persons who have any regard for their health.

Mechanics refuse seed oils because of their dryness, as they gum up the machinery instead of greasing it and keeping it clean. It is just as important that the machinery of the human body should rebel against such oils. We ought to be familiar with the methods of extracting oil from all oleaginous substances, being so necessary to different industries. But all the table oil should give the preference to that made from a tree that the Almighty saved from the destruction of the Deluge and a branch of which the dove carried to Noah as a sign of forgiveness.

ARTICLE XI.—THE ADULTERATION OF OLIVE OIL.

I have copied from a paper read before the Liverpool Chemists' Association, by Michael Conroy, F.C.S., the same published in the "Pharmaceutical Journal," as follows:

The favorite method proposed by M. Poutet, consists in heating up the oil with one twelfth of its weight of solution of nitrate of mercury. The nitrous acid or nitric peroxide evolved from this, converts the oleine of olive oil into elaidin, causing the olive oil, if pure, to become solid in a couple of hours, while the drying oils remain liquid. It will be seen from this that olive oil adulterated with any of the drying oils will not set as hard nor as quickly as genuine olive oil, and that the consistency to which the sample sets, and the time occupied in setting, somewhat roughly indicate the amount of adulteration. A modification of this process is to use nitric acid instead of the solution of nitrate of mercury, and I believe that this plan is practiced by many oil merchants. The *modus operandi* is to mix one half a fluid drachm of strong nitric acid with about five fluid drachms of the oil in a bottle of one fluid ounce capacity, and to shake up briskly, and put in a cool place for a few hours, when the color and consistency are noted. The results are somewhat similar to those obtained by the nitrate of mercury test. These two tests are, in my opinion, the best published; but they are not satisfactory, inasmuch as it is extremely difficult to judge of the consistency of the results obtained, and, so far as my experience goes, they are useless for samples containing less than ten or fifteen per cent of seed oils.

The plan which I recommend as more suitable for the purpose is based on an improved method of applying this last test; but instead of being guided by the consistency, I am guided by the color produced. The test is applied as follows: mix thoroughly one part of strong nitric acid (sp. gr. 1.42) with nine parts of the oil to be tested, and pour the mixture into a white porcelain dish capable of holding at least ten times the quantity. Apply heat gently, until the action between the acid and the oil is fairly set up, then remove the source of heat and stir well with a glass rod until the action is over.

Pure olive oil, thus treated and allowed to cool, sets into a pale straw-colored hard mass in an hour or two, while cotton seed and other seed oils assume a deep orange red color, and do not set like olive oil.

In hot weather it is necessary to artificially cool the sample, so as to promote the setting; but, to a practiced eye, the setting is quite unnecessary, the color being sufficiently distinct without.

It will be seen that the delicacy of this test depends upon the great contrast in color exhibited between genuine olive and seed oils, when operated on as described, so that an admixture of 5 per cent of any seed oil with olive oil is readily detected. Another important feature in this, and possessed by no other test, is the accuracy with which the approximate amount of admixture may be ascertained; and to practically show this feature, I have on the table a sample of genuine olive oil, and one of cotton-seed, and seven other samples, containing respectively 5, 10, 15, 20, 30, 40, and 50 per cent of cotton-seed oil, which have been treated by this method, and I venture to say that not one will experience any difficulty in picking out the various samples, the gradation in color being so uniform, and I may also add that it is constant. It, therefore, follows that if an oil be found to set

of a different color to that of a sample of genuine olive, the approximate amount of adulteration can be found by making and operating on a few mixtures containing a known percentage of the adulterant. A little experience in working the test will wonderfully assist in determining the percentage of admixture in any sample, but in all cases I would recommend that the test be performed in conjunction with a sample of genuine olive. The quantities which I have been in the habit of using are, one half a fluid drachm of nitric acid and nine and one half fluid drachms of oil, and having used the test for about three years, I can confidently recommend it as thoroughly reliable and constant when carefully carried out. The heat should be removed as soon as the action has fairly started, and the mixture should be kept well stirred until the action is over. Should too much heat be applied, the action becomes violent and unmanageable, and some of the mixture will spurt out of the dish. The spurting, however, may be prevented, by placing a plate, or other flat body, over the dish. The results obtained are never as good when the action is so violent as to cause spurting.

The reputation of the author of the above is sufficient to recommend the certainty of the test, but as all consumers have not the material or apparatus at hand, they can satisfy themselves of the large percentage of adulteration contained in at least one of the most popular brands imported from Europe by a much simpler method.

Take one bottle of Lucca oil, put up by Crosse & Blackwell, of London, and one bottle of my oil; put both in an ice freezer where the temperature is as low as 35° to 40° F., and leave them over night. An inspection in the morning will satisfy any one who may now have doubts as to the adulteration of the former.

The adulteration of the Barton & Guestier oil cannot be exposed by this test, but your druggist can expose it for you by the "Couroy" method. I only mention these two brands, for the reason that they command the highest price and are the favored importations. While I was engaged in the shipping business in the city of New York, our firm had one telegraphic order for one thousand tierces of hog's lard to go to the Mediterranean to adulterate olive oil.

One year's exports of cotton-seed oil from New Orleans to the Mediterranean was sufficient in quantity to fill "fifteen million" ordinary oil bottles, the cost of the oil in each bottle being less than ten cents. So long as our people are willing to pay a dollar for what is not worth anything, and which costs less than ten cents, so long will hog's lard and cotton seed, under false labels, be consumed by them as olive oil. As to the effect on the human body of a liberal use of these admixtures I refer to my previous article, or to the writings on the subject by every intelligent author since the commencement of time.

ARTICLE XII.—CONCLUSION.

With this chapter my articles on olive culture will close. Before closing, however, it is necessary to add, as supplementary to Article VIII, that insect pests destructive to the olive, as also to citrus fruits, are called by different names. I have in my article used the scientific name of *Coccus oleæ* in speaking of the black scale.

In a very interesting treatise on insect pests published by Matthew Cooke, Chief Horticultural Officer of this State, this insect is called *Lecanium oleæ*, given as the classification of Monsieur V. Signoret, of Paris; also in the same book from a paper of Professor Comstock, this insect is called *Lecanium oleæ*. This scientist also claims that he has discovered scale insects not previously described or named. Different names for the same thing is very unfortunate and misleads the investigator. We who have to fight insect pests care very little under what name we fight them, but we want information, and cannot afford the confusion or difficulties to be met with by reason of a multiplicity of names. If scientists who claim

the right of the naming power disagree on this important point it detracts from our respect for the importance of their work.

I have adhered to the classification *Coccus* for the reason that all French writers on the olive that I have consulted have done so, with but one exception.

As an authority on this subject I quote from Alfred Le Jourdan in his work "*Maladie Noire*," pages 15 to 31:

These insects form the genus *Coccus* founded by Linnæus and adopted by the greater number of authors.

1. The *Coccus hesperidum*, citrus scale.
2. The *Coccus aonidum*, oleander scale.
3. The *Coccus adonidum*, hot-house scale.
4. The *Coccus oleæ*, olive scale.
5. The *Coccus ficus caricæ*, scale of the fig.
6. The *Coccus vitis*, scale of the vine.

Some authors have classified these insects by the number of the antennæ, the form of the body, the presence of rings, etc., but these divisions established on characters of very little importance, and which sometimes vary, I think it is more natural to preserve the grand genus *Linnæen*, the *Coccus*.

In the Lecanium they have placed the *Coccus hesperidum*, the *Coccus aonidum*, and the *Coccus oleæ*.

In the classification, as above from one to six these insects have been variously named.

1. The *Coccus hesperidum* the *Coccus hypernacularum*, the *Pediculus clypeatus*, the *Kermes hesperidum*, the *Lecanium hesperidum*.

2. *Coccus aonidum*, the *Coccus indarum arboreum*, the *Coccus hesperidum minor*, the *Kermes aonidum*, the *Lecanium aonidum*.

3. The *Coccus adonidum*, the *Pediculus hypernacularum*, the *Pediculus adonidum*, the *Pediculus coffeæ*, the *Coccus rufus farinaceus*.

4. The *Coccus oleæ*, the *Kermes oleæ*, the *Lecanium oleæ*.

5. The *Coccus ficus caricæ*, the *Kermes ficus caricæ*, the *Lecanium ficus caricæ*.

6. The *Coccus vitis*, the *Kermes vitis*.

These are the principal kinds of *Coccus*, corresponding to a certain extent, and the attack always followed by the black fungus.

The *Coccus adonidum* (hot house scale), originated in Senegal, and attacks more particularly the citrus trees, and is very difficult to destroy.

The *Coccus hesperidum* (citrus scale), originated in America or Africa.

The *Coccus aonidum* originated in the Indian Archipelago, and thrives more particularly on the oleander.

The *Coccus ficus caricæ* commits great ravages on the fig. It produces about the same effect on the fig that the black scale does on the olive, multiplies with great rapidity, but not so rapidly as the olive scale.

The *Coccus oleæ*, so destructive to the olive, is a native of the borders of the Mediterranean, and increases with the greatest rapidity.

The *Coccus vitis* exercises its destructive action on the vine.

I differ from the conclusions of scientists as to the natural home of some of these insects. They do not, or can not exist where there are many degrees of frost. They do not thrive in the tropics.

The olive was grown successfully for at least four thousand years in parts of Asia, and a very great length of time in Africa, and on the coast of the Mediterranean, without being infested with the *Coccus*. It could not be a native of these places. The natural home is in a climate similar to Australia and that of California.

THE ENGLISH WALNUT.

Mr. Cooper read the following essay on the English walnut before the State Horticultural Society, November 1, 1886, and published in their biennial report:

The English walnut as known to botanists, *Juglans regia*, is unisexual, bearing both the staminate and pistillate flowers. "*Juglans*" is a contraction of "*Jovis glans*" (glans of Jupiter). Evidently the naming party had

a high idea of this most valuable tree. It is a native of Persia and Himalaya: was cultivated by the Romans in the time of Tiberius, in the year 42 before Christ: has been extensively grown in southern Europe down to the present time. The tree does well in England, but does not begin to bear until about the twenty-fifth year. I have seen a very large tree in Bartram's Garden in Philadelphia, probably seventy to eighty feet high. Was told by the owner that it rarely bore fruit, and never more than a few in any one year, probably from the severity of the weather during the time it produces the staminate flowers. This period in Santa Barbara is from April first to fifteenth.

The plan of propagation in California is to plant the nut in nursery form in the spring of the year, in well cultivated sandy loam, about six inches deep. The first year they will grow from six inches to one foot high; the second, from one and a half to three feet: the third, from five to six feet. At this period it is considered the best for transplanting to permanent sites. The trees are generally planted forty feet distant each way. An orchard planted in proper soil and well taken care of, will begin to bear the eighth year, and when ten years from transplanting will give a handsome return.

During the first years, constant pruning is necessary, to have the tree properly shaped. I have pruned in a summer as many as four or five times. Branches are apt to grow too rapidly, bear down with their own weight, and break off during high winds, destroy the symmetry of the tree, and occasion much loss of time. All lateral branches growing from the leader should be cultivated to assume an upward angle from the main leader of about fifteen or forty-five degrees. This can be done by clipping off all branches growing under, and at times cut off the ends. A trunk should be maintained free from limbs five and a half to six feet from the ground. Earth should be kept away from the trunks, and if the top roots near the trunk are exposed, so much the better; it will assist the tree in breathing. The most careful cultivation is necessary, and nothing, after the fifth year, should be grown between the rows.

The fruit is easily gathered, as the husk opens and drops the nut. The fruit should be gathered as soon as it falls, and properly dried. In a drying house, well ventilated, it requires about twenty-four hours at 120 degrees. In the sun, from ten to twelve days. When well cured, they will keep sweet for more than a year. The meat is unsurpassed as an article of food; it gives to the system all the strength and vigor that can be obtained from animal food, is more healthful, and of greater economy. One acre in matured trees, for food-giving sustenance, would equal very many acres devoted to beef growing. Rancid nuts should not be eaten.

From the "*Bon Jardinier*," a French work, I copy the statement that "the nut furnishes about half the oil that is consumed in France;" that "the tree there at twenty years gives a passable product, at sixty years the maximum quantity;" that "the tree grows from sixty to ninety feet high;" that "twenty good trees grow on a hectare of land" (two and one half acres). This would be about eight to the acre and seventy-three feet distant from each other. That "3,000 francs is a possible crop per hectare," equal to \$225 per acre, and from eight trees, or \$28 per tree; that "the annual production of twenty good trees is often worth more than the value of the land;" that "whole orchards have been destroyed on account of the great value of timber for manufacturing furniture." Notwithstanding this apparent unwise policy, it has been, and is still going on, and the denuded orchards not replanted.

At my home at Ellwood, in Santa Barbara County, taking the very best yield I have yet had from fifty-five acres, the crop of this year, sold at a

good price, gives only \$128 per acre. These trees were two-year old plants set in the ground in the springs of 1872-3-4. Many of them are now touching in the center of the rows. To prune them back will be a great work. To take out every other one and give them eighty feet each, which we will probably be obliged to do sooner or later, will give us only about seven to each acre.

The production as above is a good showing, but when we consider the time that the walnut grower has to wait for a crop and the value of the land for other purposes, say for lima beans, it is, after all, not so much. The area of land suitable for successful walnut growing is very limited. It requires well drained, deep, sandy, bottom land, well protected, and where no "live oak" trees have grown within the last century. Everywhere where the live oak has been recently rooted out the walnut tree will die about the time it bears the second crop, perhaps earlier. The second planted to replace will die in about the fifth year: the third, in the first, second, or third year. I doubt if any fruit trees will do well where an oak forest has recently existed.

The elder Pliny, in his natural history, written nearly two thousand years ago, speaks of this fact existing on the northern coast of the Mediterranean, and cautious planters from attempting fruit growing where an oak forest has recently existed.

There are various other causes, no doubt, that will prevent success. Trees will die apparently without a cause, and the planter, after waiting ten or a dozen long years, will be compelled to root them out and try something else. One half the orchards that have been planted will never be a success.

My advice to those anticipating walnut growing is, first visit the various localities and profit by the experience of those now engaged in the business. In Santa Barbara there is no irrigation. A very interesting paper on the walnut was read by F. R. Willis before the Los Angeles Pomological Society, at Downey City, October seventh last, published in the "Los Angeles Sunday Herald" of the tenth. Mr. Willis presents extreme views, with which I do not agree.

ELLWOOD COOPER.

SANTA BARBARA, November 1, 1886.

THE ARID REGION.

GREELY'S STATEMENT OF RAINFALL BEYOND THE MISSISSIPPI.

General A. W. Greely, Chief Signal Officer, gave to the Washington Philosophical Society, at its regular meeting, February eighteenth, the partial results of a study he is now engaged upon, of the rainfall in the trans-Mississippi region. He had before him a number of maps upon which had been charted the observations which were the basis of his study, and referred to them constantly as he spoke. He said that the idea that there is any part of the west that is absolutely rainless is now a banished myth. During the past ten years the number of stations for observation has been doubled, so that there are, in twelve States and Territories, nearly one hundred stations; and the observations, if reduced to a single one, would cover a period of nearly five thousand years. The result of charting these observations has been to reduce very greatly the areas of small rainfall. The area in which the annual precipitation was supposed to be less

than five inches, has almost disappeared, and that in which the rainfall was put down at less than fifteen inches, has been reduced by a quarter of a million of square miles since the census map of 1880 was made.

General Greely discussed the question of what constitutes an arid region, and said that he does not agree with Major J. W. Powell, who placed the minimum amount of precipitation necessary for successful agriculture at twenty inches per annum. He said that millions of bushels of wheat are raised every year where the rainfall is less than twenty inches, and referred to the statistics of Dakota, where more than two million six hundred thousand bushels were raised in the two counties of Richland and Stutsman in 1885, and one million five hundred thousand in 1887, with an average rainfall of 13.7 to 15.1 inches.

General Greely also mentioned the interesting fact, that, while the rainfall increases as the rivers which flow directly into the Gulf of Mexico or into the Pacific Ocean are followed up from their mouths, it increases with the distance from the mouths of such as empty into other bodies of water, like the Colorado.

General Greely's charts also prove that much of the rainfall in what has been known as the arid region, and where it was formerly supposed that the precipitation was five inches or less, was not reported. In some of these places the actual rainfall is as much as sixteen inches, and in one it is thirty-seven. This explains why water is found so abundantly in wells in some parts of Southern California, where the annual rainfall has been reported as ten, twelve, and thirteen inches; the actual precipitation is twenty-four inches.

General Greely said that he had caused to be placed upon the charts the maximum and the minimum rainfall of the various stations, not expecting that they would indicate anything, but that the curves were almost as those on the annual maps. He explained that the small average amount of rainfall formerly reported was due in part to the fact that so large a number of stations had been situated along the line of the Pacific Railroad, which, seeking low gradients, had been built through a section of country in which the precipitation was small. He spoke also of the prevalent opinion that the rainfall in the west is increasing, and said that he thinks this opinion to be correct, and closed with the remark that it was not fair to treat that country on the basis of seasonable rains, since the larger portion of the precipitation took place during different months in different sections of the region.

In the brief discussion which followed the address, Professor G. K. Gilbert said it was not safe to fix any given amount of rainfall as the minimum necessary for successful agriculture, without qualifications. Very much depends upon the time when the rain falls, and the rapidity with which evaporation takes place. More rain is required in Arizona than in Dakota, and many unsuccessful agricultural experiments have been made in Utah, near Camp Douglass, where the annual precipitation is as much as eighteen inches.

Professor Fernow said that he had compared the amount of rainfall during the five months of vegetation, in Philadelphia, Buffalo, Dodge City, and North Platte. It ranges from fifteen to seventeen inches, the largest amount of precipitation being at North Platte. There was no lack of rainfall at the eastern stations, but at North Platte it was impossible to raise a crop. He learned also from Utah that the amount of water needed to irrigate land there was less after two or three years than when it was first turned on.

Professor C. V. Riley spoke of the frequency and violence of the rainfall as modifying in an important degree its effect.

TRANSACTIONS

OF THE

FIRST DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of San Francisco, Contra Costa, and Alameda.

OFFICERS OF THE ASSOCIATION.

JAMES ADAMS	President.
JOS. I. DIMOND	Secretary.
UNION NATIONAL BANK (of Oakland).....	Treasurer.

DIRECTORS.

JAMES ADAMS	Oakland.
J. C. SMITH	Oakland.
ROBERT McKILLICAN	Oakland.
J. E. McELRATH	Oakland.
W. W. CAMRON	Oakland.
R. T. CARROLL	San Francisco.
A. B. SPRECKELS	San Francisco.
P. A. FINIGAN	San Francisco.

REPORT.

DECEMBER 31, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the First District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

JOS. I. DIMOND, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

From trotters and runners on entries	\$5,300 00	
From gate	4,875 00	
From sweepstakes and herds.....	257 00	
From sale of privileges.....	4,000 00	
		<hr/>
		\$14,432 00

Expenditures.

Paid winners of trotting and running races	\$10,610 00	
Paid on miscellaneous account.....	1,598 17	
Paid on labor account.....	325 00	
Paid as premiums on stock, etc.	1,607 50	
		<hr/>
		\$14,140 67

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGHBRED HORSES—STALLIONS.		
<i>Three Years Old and Over.</i>		
Three Cheers	Thos. G. Jones	Pleasanton.
Grover Cleveland	Matt. Storns	Oakland.
Wallace	W. M. Murry	Sacramento.
<i>Two Years Old.</i>		
Surinam	W. M. Murry	Sacramento.
(No name)	L. U. Shippee	Stockton.
<i>One Year Old.</i>		
Daly Dimple	W. M. Murry	Sacramento.
MARES.		
<i>Three Years Old and Over.</i>		
Ruth	Thos. G. Jones	Pleasanton.
Narcola	Matt. Storns	Oakland.
Ninena	B. C. Holly	Vallejo.
<i>Two Years Old.</i>		
Rosedale	Matt. Storns	Oakland.
Fusillade's Last	B. C. Holly	Vallejo.
CLASS II—FAMILIES.		
<i>Stallions, other than Thoroughbred, with not less than Five Colts.</i>		
Suffolk Prince, with five colts	R. Ashburner	Baden Station.
<i>Mares, other than Thoroughbred, with not less than Two Colts.</i>		
Dolly, with two colts	R. Ashburner	Baden Station.
Brownie H, with five colts	L. Hewlett	Oakland.
CLASS III—HORSES OF ALL WORK.		
<i>Three Years Old and Over.</i>		
Royal Studley	Seth Cook	Danville.
Baron Hilton	Seth Cook	Danville.
Tempest	B. E. Harris	San Francisco.
<i>One Year Old.</i>		
Thomas W	Thos. Ward	Oakland.
<i>Under One Year Old.</i>		
Antelope	L. Hewlett	Oakland.
MARES.		
<i>Three Years Old and Over.</i>		
Brownie H	L. Hewlett	Oakland.
Daisy Dale	J. C. Smith	Danville.
Darling	R. Ashburner	Baden Station.
Dolly	R. Ashburner	Baden Station.
Diamond	R. Ashburner	Baden Station.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Two Years Old.</i>		
Brunette	R. Ashburner	Baden Station.
Lofty	R. Ashburner	Baden Station.
<i>One Year Old.</i>		
Daisy	R. Ashburner	Baden Station.
<i>Under One Year.</i>		
Diana	R. Ashburner	Baden Station.
CLASS IV—ROADSTERS—STALLIONS.		
<i>Four Years Old and Over.</i>		
Salidan	C. C. Bemis	San Francisco.
Lancelot	C. C. Bemis	San Francisco.
James H	M. McDonald	San Miguel.
Young Altmont	M. McDonald	San Miguel.
Woodnut	B. C. Holly	Vallejo.
Young Venture	Thomas Clark	San Pablo.
Rosewood	A. J. Bryant	San Francisco.
<i>Three Years Old.</i>		
Charles S	Chas. Slowberg	San Francisco.
<i>Two Years Old.</i>		
Grand	J. Donnelly	San Mateo.
Sharon	L. Hewlett	Oakland.
<i>One Year Old.</i>		
George V	G. Valensin	Sacramento.
Rhodes D	J. W. Donathan	San José.
Storm	B. H. Harris	San Francisco.
<i>Suckling Colts.</i>		
Ajax	A. J. Bryant	San Francisco.
MARES OR GELDINGS.		
<i>Four Years Old and Over.</i>		
Gip	M. McDonald	San Miguel.
Bookmaker	C. H. Kingsley	San Francisco.
Little Fred	C. H. Henchman	San Francisco.
Clatawa	J. Donnelly	San Mateo.
Billy O'Brien	C. H. Crittenden	San Francisco.
Turza	B. E. Harris	San Francisco.
Lady Mary	A. J. Bryant	San Francisco.
<i>Three Years Old.</i>		
Santanla Bell	L. Hewlett	Oakland.
<i>Two Years Old.</i>		
Flora	C. C. Bemis	San Francisco.
<i>One Year Old.</i>		
Alda H	L. Hewlett	Oakland.
Lupin	B. E. Harris	San Francisco.
MATCHED SPAN.		
<i>Owned and Used by One Person.</i>		
George and Nicodemus	F. Lapham	Alameda.
Alexis and Patsy	A. B. Spreckels	San Francisco.
Sir Whipple and Adventure	B. E. Harris	San Francisco.
CLASS V—DRAFT HORSES—STALLIONS.		
<i>Three Years Old and Over.</i>		
Suffolk Prince	R. Ashburner	Baden Station.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Under One Year.</i>		
Star	R. Ashburner	Baden Station.
MARES.		
<i>Three Years Old and Over.</i>		
Lizzie	R. Ashburner	Baden Station.
CLASS VI—CARRIAGE HORSES.		
Brownie H and Santanica	L. Hewlett	Oakland.
Billie and Jennie	W. Bihlar	Petaluma.
SADDLE HORSES.		
Monarch	F. Lapham	Alameda.
Billy	B. E. Harris	San Francisco.
SWEEPSTAKES—STALLIONS.		
Baron Hilton	Seth Cook	Danville.
Woodnut	B. C. Holly	Vallejo.
Young Venture	Thomas Clark	San Pablo.
Rosewood	A. J. Bryant	San Francisco.
MARES.		
Brownie H	L. Hewlett	Oakland.
Darling	R. Ashburner	Baden Station.
Lady Mary	A. J. Bryant	San Francisco.
SPECIAL CLASS—HUNGARIAN PONIES.		
Dosey and Flossy	J. K. Newton	San Francisco.
CLASS I—DURHAMS—BULLS.		
<i>Three Years Old and Over.</i>		
Sonoma 2d	W. Page	Sonoma County.
Baden Duke 7th	R. Ashburner	Baden Station.
<i>Two Years Old.</i>		
Mugwump	W. Page	Sonoma County.
Oxford Boy	R. Ashburner	Baden Station.
<i>One Year Old.</i>		
Mazcar	W. Page	Sonoma County.
Patsy Carroll	W. Page	Sonoma County.
Gold Prince	W. Page	Sonoma County.
Rosecrucian	W. Page	Sonoma County.
Takes the Cake	W. Page	Sonoma County.
Duke of Baden 2d	R. Ashburner	Baden Station.
<i>Under One Year.</i>		
Boom	W. Page	Sonoma County.
Red Duke	R. Ashburner	Baden Station.
Baden Duke 24th	R. Ashburner	Baden Station.
Barron Frantic	R. Ashburner	Baden Station.
COWS.		
<i>Three Years Old and Over.</i>		
Peerless Rose	W. Page	Sonoma County.
Maita	W. Page	Sonoma County.
Zurka Princess	W. Page	Sonoma County.
Belle Medico	W. Page	Sonoma County.
Belle Sonoma	W. Page	Sonoma County.
Minstrel Gwynne 1st	R. Ashburner	Baden Station.
Minstrel Gwynne 2d	R. Ashburner	Baden Station.
Frantic 9th	R. Ashburner	Baden Station.
<i>Two Years Old.</i>		
Cherry Rose	W. Page	Sonoma County.
Belle Sonoma 2d	W. Page	Sonoma County.
Caroline	W. Page	Sonoma County.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>One Year Old.</i>		
Belle o' the Meace.....	W. Page	Sonoma County.
<i>Heifer Calf, Under One Year Old.</i>		
Goldnut	W. Page	Sonoma County.
CLASS II—HEREFORDS—BULLS.		
<i>Three Years Old and Over.</i>		
Vanguard	Wm. Dunphy	San Francisco.
<i>Two Years Old.</i>		
Daniel Webster	Wm. Dunphy	San Francisco.
<i>One Year Old.</i>		
John L. Sullivan	Wm. Dunphy	San Francisco.
Grover Cleveland	Wm. Dunphy	San Francisco.
Thomas Hendricks	Wm. Dunphy	San Francisco.
Henry Clay	Wm. Dunphy	San Francisco.
COWS.		
<i>Three Years Old and Over.</i>		
Temptress 1st	Wm. Dunphy	San Francisco.
Triumph Thora	Wm. Dunphy	San Francisco.
Fairy	Wm. Dunphy	San Francisco.
Queen	Wm. Dunphy	San Francisco.
Violette	Wm. Dunphy	San Francisco.
Valletta 3d	Wm. Dunphy	San Francisco.
Kate	Wm. Dunphy	San Francisco.
Curley	Wm. Dunphy	San Francisco.
Tidy	Wm. Dunphy	San Francisco.
Mary 1st	Wm. Dunphy	San Francisco.
<i>Heifers, Under One Year Old.</i>		
Temptress 2d	Wm. Dunphy	San Francisco.
Jenny	Wm. Dunphy	San Francisco.
Bunchie	Wm. Dunphy	San Francisco.
Elida	Wm. Dunphy	San Francisco.
Patti	Wm. Dunphy	San Francisco.
CLASS III—GALLOWAYS AND POLLED ANGUS—BULLS.		
<i>Three Years Old and Over.</i>		
Marathon of Fintray	Seth Cook	Danville.
Admiral	Seth Cook	Danville.
<i>Under One Year.</i>		
Doubt	Seth Cook	Danville.
Jerry	Seth Cook	Danville.
Vigilant	Seth Cook	Danville.
Peter	Seth Cook	Danville.
COWS.		
<i>Three Years and Over.</i>		
Violet 2d	Seth Cook	Danville.
Bathy's Lass	Seth Cook	Danville.
Doras Lass	Seth Cook	Danville.
Rosella 2d	Seth Cook	Danville.
<i>Two Years Old.</i>		
Lanquia	Seth Cook	Danville.
Jet	Seth Cook	Danville.
Jessamine	Seth Cook	Danville.
<i>One Year Old.</i>		
Princess Lyddie	Seth Cook	Danville.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Heifer Calf, Under One Year.</i>		
Bannerette	Seth Cook	Danville.
CLASS V—AYRSHIRES—BULLS.		
<i>Two Years Old.</i>		
Ethelbert	Geo. Bement & Son	Redwood City.
<i>One Year Old.</i>		
Lord Taxton	Geo. Bement & Son	Redwood City.
<i>Under One Year.</i>		
Red Mikado	Geo. Bement & Son	Redwood City.
Hotspur	Geo. Bement & Son	Redwood City.
COWS.		
<i>Three Years and Over.</i>		
Elaine	Geo. Bement & Son	Redwood City.
Marion	Geo. Bement & Son	Redwood City.
Sybilla	Geo. Bement & Son	Redwood City.
<i>Two Years Old.</i>		
Sylph	Geo. Bement & Son	Redwood City.
<i>One Year Old.</i>		
Ethelberta	Geo. Bement & Son	Redwood City.
<i>Under One Year.</i>		
Faxonea	Geo. Bement & Son	Redwood City.
CLASS VII—JERSEYS, ALDERNEYS AND GUERNSEYS—BULLS.		
<i>Three Years Old and Over.</i>		
Oakland Chief	Thomas Ward	Oakland.
<i>Two Years Old.</i>		
Billy Ralston	Thomas Ward	Oakland.
Horace Greely	John Greely	San Francisco.
<i>One Year Old.</i>		
Prince of Oakland	P. C. Anderson	Oakland.
<i>Under One Year.</i>		
Walter Mann	Thomas Ward	Oakland.
COWS.		
<i>Three Years Old and Over.</i>		
Oakland Bess	Thomas Ward	Oakland.
Lady Maud	Thomas Ward	Oakland.
Adelina Patti	P. C. Anderson	Oakland.
Bonnello	P. C. Anderson	Oakland.
<i>Two Years Old.</i>		
Anita	Thomas Ward	Oakland.
Berdie	Thomas Ward	Oakland.
HEIFERS.		
<i>Under One Year.</i>		
Mrs. Cleveland	Thomas Ward	Oakland.
CLASS VIII—HOLSTEINS—BULLS.		
<i>Three Years Old and Over.</i>		
Sedro	F. H. Burke	Menlo Park.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Two Years Old.</i>		
Kingsbury	F. H. Burke	Menlo Park.
Jacob Lisbon	F. H. Burke	Menlo Park.
Oro Blanco	J. H. White	Lakeville.
Leicester	J. H. White	Lakeville.
<i>One Year Old.</i>		
Von Moltke	F. H. Burke	Menlo Park.
El Cuervo	F. H. Burke	Menlo Park.
Lawrin	J. H. White	Lakeville.
Huachuca	J. H. White	Lakeville.
<i>Under One Year Old.</i>		
King of Menlo	F. H. Burke	Menlo Park.
Mateo	J. H. White	Lakeville.
Lornitas	J. H. White	Lakeville.
COWS.		
<i>Three Years Old and Over.</i>		
Lena Wit	F. H. Burke	Menlo Park.
Thissa	F. H. Burke	Menlo Park.
Sylpha	F. H. Burke	Menlo Park.
Kollie Lincoln	F. H. Burke	Menlo Park.
Anemie	J. H. White	Lakeville.
Winfredella	J. H. White	Lakeville.
Letta	J. H. White	Lakeville.
Dagodine	J. H. White	Lakeville.
Wayward	J. H. White	Lakeville.
Annot Lyle	J. H. White	Lakeville.
<i>Two Years Old.</i>		
Edna of Troy	F. H. Burke	Menlo Park.
Ocala	J. H. White	Lakeville.
Darkness	J. H. White	Lakeville.
<i>One Year Old.</i>		
Wiscassett	F. H. Burke	Menlo Park.
Thissette	F. H. Burke	Menlo Park.
Linconia	F. H. Burke	Menlo Park.
Kollie Lincoln 2d	F. H. Burke	Menlo Park.
Lasquite	J. H. White	Lakeville.
Sierra	J. H. White	Lakeville.
<i>Under One Year.</i>		
Kentucky Princess	F. H. Burke	Menlo Park.
Bumblebee	J. H. White	Lakeville.
Chiquita	J. H. White	Lakeville.
HERDS—DURHAMS.		
<i>One Male and Four Females, owned by one person, Over Two Years Old.</i>		
Mugwump		
Belle Medico		
Belle Sonoma		
Belle Sonoma 2d		
Carolina		
Sonoma 2d	W. Page	Sonoma County.
Maita		
Peerless Rose		
Zurka Princess		
Cherry Rose		

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
HERDS—GALLOWAY AND POLLED ANGUS.		
One Male and Four Females, owned by one person, Over Two Years Old.		
Marathon of Fintray.....	Seth Cook	Danville.
Violet 2d		
Dora's Lass		
Bathy's Lass		
Rosilla 2d		
HERDS—JERSEYS, ALDERNEYS, AND GUERNSEYS.		
One Male and Four Females, owned by one person, Over Two Years Old.		
Oakland Chief	Thomas Ward	Oakland.
Oakland Bess		
Lady Maud		
Berdie		
Anita		
HERDS—AYRSHIRES.		
One Male and Four Females, owned by one person, Over Two Years Old.		
Lord Faxon	Geo. Bement & Son.....	Redwood City.
Elaine		
Marion		
Sybilla		
Sylph		
HERDS—HOLSTEINS.		
One Male and Four Females, owned by one person, Any Age.		
Sedro	F. H. Burke	Menlo Park.
Lena Menlo		
Thissa		
Sylph		
Kollie Lincoln		
Oro Blanco	J. H. White	Lakeville.
Annemia		
Dagodine		
Wayward		
Winfredella		
GRADED CATTLE.		
Best Cow, Three Years Old and Over.		
Music	R. Ashburner	Baden Station.
Best Cow, Two Years Old.		
Bright Beauty	R. Ashburner	Baden Station.
Best Cow, One Year Old.		
Peach Blossom	R. Ashburner	Baden Station.
Best Calf, Under One Year.		
Gilliver	R. Ashburner	Baden Station.
Best Steer.		
Black Prince	Seth Cook	Danville.
SHEEP.		
Southdown ram	Geo. Bement & Son	Redwood City.
Southdown pen of not less than five ewes, one year old and over	Geo. Bement & Son	Redwood City.
Shropshire ram (Royal Duke)	Andrew Smith	Redwood City.
Shropshire ram (Royal Prince)	Andrew Smith	Redwood City.
Shropshire pen of not less than five ewes, one year old and over	Andrew Smith	Redwood City.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
SWINE.		
<i>Essex and Berkshire Boars.</i>		
Redwood Duke.....	Andrew Smith.....	Redwood City.
Redwood Duke 3d.....	Andrew Smith.....	Redwood City.
Cleveland.....	T. J. Parsons.....	Martinez.
<i>Sows.</i>		
Redwood Sallie.....	Andrew Smith.....	Redwood City.
Redwood Sallie 3d.....	Andrew Smith.....	Redwood City.
Carlotta.....	T. J. Parsons.....	Martinez.
Sow and four pigs.....	Andrew Smith.....	Redwood City.
CLASS I—SWEEPSTAKES—DURHAMS, HEREFORDS, GALLOWAYS, AND POLLED ANGUS.		
<i>Bulls.</i>		
Admiral.....	Seth Cook.....	Danville.
Mugwump.....	W. Page.....	Sonoma County.
Baden Duke 7th.....	R. Ashburner.....	Baden Station.
Marathon of Fintray.....	Seth Cook.....	Danville.
<i>Cows.</i>		
Violet 2d.....	Seth Cook.....	Danville.
Barthay's Lass.....	Seth Cook.....	Danville.
Maita.....	W. Page.....	Sonoma County.
Minstrel Gwynne 1st.....	R. Ashburner.....	Baden Station.
Minstrel Gwynne 2d.....	R. Ashburner.....	Baden Station.
CLASS II—AYRSHIRES, JERSEYS, ALDERNEYS, HOL- STEINS, AND DEVONS.		
<i>Bulls.</i>		
Sedro.....	F. H. Burke.....	Menlo Park.
Prince of Oakland.....	P. C. Anderson.....	Oakland.
Oakland Chief.....	Thos. Ward.....	Oakland.
<i>Cows.</i>		
Lena Witt.....	F. H. Burke.....	Menlo Park.
Adelina Patti.....	P. C. Anderson.....	Oakland.
SWEEPSTAKES—SHEEP.		
<i>Any Age or Breed.</i>		
Royal Duke.....	Andrew Smith.....	Redwood City.
<i>Rams.</i>		
Royal Prince.....	Andrew Smith.....	Redwood City.
.....	Geo. Bement & Son.....	Redwood City.
POULTRY.		
Pekin ducks.....	F. H. Burke.....	Menlo Park.
Bremen geese.....	F. H. Burke.....	Menlo Park.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBRED STALLIONS.			
<i>Three Years Old and Over.</i>			
Grover Cleveland	Matt. Storns	Oakland	1st premium.
Three Cheers	Thomas G. Jones	Pleasanton	2d premium.
<i>Two Years Old.</i>			
Surinam	W. M. Murry	Sacramento	1st premium.
Brown colt	L. U. Shippee	Stockton	2d premium.
MARES.			
<i>Three Years Old and Over.</i>			
Narcola	Matt. Storns	Oakland	1st premium.
Ninena	B. C. Holly	Vallejo	2d premium.
<i>Two Years Old.</i>			
Rosedale	Matt. Storns	Oakland	1st premium.
Fusillade's Last	B. C. Holly	Vallejo	2d premium.
CLASS II—FAMILIES.			
<i>Stallions, other than Thoroughbred, with Five Colts.</i>			
Suffolk Prince—Colts: Diamond, Brunette, Lofty, Dinah, Star	Robert Ashburner	Baden Station	1st premium.
<i>Dam, other than Thoroughbred, with two Colts.</i>			
Brownie H, with colts Santaretta, Sharon, Ada H, and Antelope	L. Hewlett	Oakland	1st premium.
CLASS III—HORSES OF ALL WORK—STALLIONS.			
<i>Three Years Old and Over.</i>			
Baron Hilton	Seth Cook	Danville	1st premium.
Royal Studley	Seth Cook	Danville	2d premium.
<i>One Year Old.</i>			
Thomas W	Thomas Warde	Oakland	1st premium.
<i>Under One Year.</i>			
Antelope	L. Hewlett	Oakland	1st premium.
MARES.			
<i>Three Years Old and Over.</i>			
Brownie H	L. Hewlett	Oakland	1st premium.
Darling	R. Ashburner	Baden Station	2d premium.
<i>Two Years Old.</i>			
Brunette	R. Ashburner	Baden Station	1st premium.
<i>One Year Old.</i>			
Daisy	R. Ashburner	Baden Station	1st premium.
<i>Under One Year.</i>			
Dina	R. Ashburner	Baden Station	1st premium.

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS IV—ROADSTERS—STALLIONS.			
<i>Four Years Old and Over.</i>			
Woodnut	B. C. Holly	Vallejo	1st premium.
Salidan	C. C. Bemis	San Francisco	2d premium.
<i>Three Years Old.</i>			
Charles S.	Charles Slowberg	San Francisco	1st premium.
<i>Two Years Old.</i>			
Grand	J. Donnelly	San Mateo	1st premium.
Sharon	L. Hewlett	Oakland	2d premium.
<i>One Year Old.</i>			
George V.	G. Valensin	Sacramento	1st premium.
<i>Suckling Colt.</i>			
Ajax	A. J. Bryant	San Francisco	1st premium.
MARES OR GELDINGS.			
<i>Four Years Old and Over.</i>			
Bookmaker	C. H. Kingsley	San Francisco	1st premium.
Turza	B. E. Harris	San Francisco	2d premium.
<i>Three Years Old.</i>			
Santa Rita Bell	L. Hewlett	Oakland	1st premium.
<i>One Year Old.</i>			
Alda H.	L. Hewlett	Oakland	1st premium.
SPAN OF ROADSTERS.			
George and Nicodemus	F. Lapham	Alameda	1st premium.
Sir Whipple and Adventure	B. E. Harris	San Francisco	2d premium.
CLASS V—DRAFT HORSES—STALLIONS.			
<i>Three Years Old and Over.</i>			
Suffolk Prince	R. Ashburner	Baden Station	1st premium.
<i>Under One Year.</i>			
Star	R. Ashburner	Baden Station	1st premium.
MARES.			
<i>Three Years Old and Over.</i>			
Lizzie	R. Ashburner	Baden Station	1st premium.
CLASS VI—SPAN OF CARRIAGE HORSES.			
Billy and Jennie	W. A. Bealer	Lakeville	1st premium.
HUNGARIAN PONIES—SPECIAL PREMIUM.			
Dorsey and Flossy	J. K. Newton	San Francisco	1st premium.
SADDLE HORSES.			
Billy	B. E. Harris	San Francisco	1st premium.
SWEEPSTAKES—STALLIONS.			
<i>Any Age or Breed.</i>			
Baron Hilton	Seth Cook	Danville	1st premium.
Royal Studley	Seth Cook	Danville	2d premium.
MARES.			
<i>Any Age or Breed.</i>			
Brownie	L. Hewlett	Oakland	1st premium.
Lady May	A. J. Bryant	San Francisco	2d premium.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
PURHAMS—BULLS.			
<i>Three Years Old and Over.</i>			
Baden Duke 7th	R. Ashburner	Baden Station	1st premium.
Sonoma 2d	W. Page	Sonoma Co.	2d premium.
<i>Two Years Old.</i>			
Mugwump	W. Page	Sonoma Co.	1st premium.
Oxford Boy	R. Ashburner	Baden Station	2d premium.
<i>One Year Old.</i>			
Patsy Carroll	W. Page	Sonoma Co.	1st premium.
Rosierucian	W. Page	Sonoma Co.	2d premium.
<i>Bull Calf.</i>			
Baron Frantic	R. Ashburner	Baden Station	1st premium.
COWS.			
<i>Three Years Old and Over.</i>			
Maita	W. Page	Sonoma Co.	1st premium.
Peerless Rose	W. Page	Sonoma Co.	2d premium.
<i>Two Years Old.</i>			
Belle of Sonoma	W. Page	Sonoma Co.	1st premium.
Carolina	W. Page	Sonoma Co.	2d premium.
<i>One Year Old.</i>			
Belle o' the Mead	W. Page	Sonoma Co.	1st premium.
<i>Heifer Calf.</i>			
Goldnut	W. Page	Sonoma Co.	1st premium.
CLASS II—HEREFORDS—BULLS.			
<i>Three Years Old and Over.</i>			
Vanguard	W. Dunphy	San Francisco	1st premium.
<i>Two Years Old.</i>			
Daniel Webster	W. Dunphy	San Francisco	1st premium.
<i>One Year Old.</i>			
Blank	W. Dunphy	San Francisco	1st premium.
COWS.			
<i>Three Years Old and Over.</i>			
Tempest	W. Dunphy	San Francisco	1st premium.
<i>Heifer Calf.</i>			
Elida	W. Dunphy	San Francisco	1st premium.
CLASS III—POLLED ANGUS—BULLS.			
<i>Three Years Old and Over.</i>			
Marathon of Finthay	Seth Cook	Danville	1st premium.
Admiral	Seth Cook	Danville	2d premium.
<i>Bull Calf.</i>			
Jerry	Seth Cook	Danville	1st premium.
COWS.			
<i>Three Years Old and Over.</i>			
Bathy's Lass	Seth Cook	Danville	1st premium.
Violet 2d	Seth Cook	Danville	2d premium.
<i>Two Years Old.</i>			
Jet	Seth Cook	Danville	1st premium.
Languid	Seth Cook	Danville	2d premium.

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
<i>One Year Old.</i>			
Princess Lyddie	Seth Cook	Danville	1st premium.
<i>Heifer Calf.</i>			
Bannerette	Seth Cook	Danville	1st premium.
CLASS V—AYRSHIRES—BULLS.			
<i>Two Years Old.</i>			
Ethelberd	Geo. Bement & Son.	Redwood City.	1st premium.
<i>One Year Old.</i>			
Lord Faxon	Geo. Bement & Son.	Redwood City.	1st premium.
<i>Bull Calf.</i>			
Red Mikado	Geo. Bement & Son.	Redwood City.	1st premium.
COWS.			
<i>Three Years Old and Over.</i>			
Sybilla	Geo. Bement & Son.	Redwood City.	1st premium.
Elaine	Geo. Bement & Son.	Redwood City.	2d premium.
<i>Two Years Old.</i>			
Sylph	Geo. Bement & Son.	Redwood City.	1st premium.
<i>One Year Old.</i>			
Ethelberta	Geo. Bement & Son.	Redwood City.	1st premium.
<i>Heifer Calf.</i>			
Faxonnia	Geo. Bement & Son.	Redwood City.	1st premium.
CLASS VI—HOLSTEINS—BULLS.			
<i>Three Years Old and Over.</i>			
Sedro	F. H. Burke	Menlo Park.	1st premium.
<i>Two Years Old.</i>			
Oro Blanco	J. H. White	Lakeville	1st premium.
Leichester	J. H. White	Lakeville	2d premium.
<i>One Year Old.</i>			
Lawrin	J. H. White	Lakeville	1st premium.
Huachuca	J. H. White	Lakeville	2d premium.
<i>Bull Calf.</i>			
Lometas	J. H. White	Lakeville	1st premium.
COWS.			
<i>Three Years Old and Over.</i>			
Annie	J. H. White	Lakeville	1st premium.
Letta	J. H. White	Lakeville	2d premium.
<i>Two Years Old.</i>			
Ocalla	J. H. White	Lakeville	1st premium.
Edna of Troy	F. H. Burke	Menlo Park.	2d premium.
<i>One Year Old.</i>			
Servia	J. H. White	Lakeville	1st premium.
<i>Heifer Calf.</i>			
Bumblebee	J. H. White	Lakeville	1st premium.
CLASS VII—JERSEYS—BULLS.			
<i>Three Years Old and Over.</i>			
Oakland Chief	T. Ward	Oakland	1st premium.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
<i>Two Years Old.</i>			
Billy Ralston.....	T. Ward	Oakland	1st premium.
<i>One Year Old.</i>			
Prince of Oakland.....	P. C. Anderson ..	Oakland	1st premium.
<i>Bull Calf.</i>			
Walter Mann.....	T. Ward	Oakland	1st premium.
<i>cows.</i>			
<i>Three Years Old and Over.</i>			
Lady Maud	T. Ward	Oakland	1st premium.
Bonillo	P. C. Anderson.....	Oakland	2d premium.
<i>Two Years Old.</i>			
Berdie	T. Ward	Oakland	1st premium.
Anita	T. Ward	Oakland	2d premium.

SPEED PROGRAMME.

WEDNESDAY, SEPTEMBER 7, 1887.

RACE No. 1—RUNNING.

Alameda Stake. For all ages. Fifty dollars entrance; half forfeit, or only fifteen dollars if declared on or before August twentieth; with four hundred dollars added; one hundred dollars to second; third to save stake. Maidens, if three years old, allowed five pounds; if four years old or over, seven pounds. Three quarters of a mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Grover Cleveland, by Monday; dam, Robin Girl.	Matt. Storns	Oakland.
Notidle, by Wildidle; dam, Bonanza	M. F. Tarpey	Alameda Co.
Edelweiss, by Joe Hooker; dam, Yolona.	John Wolfskill	Santa Monica.
Tom Atchinson, by Joe Hooker; dam, Bay Kate.	C. H. Eldred	Sacramento.
Lizzie Dunbar, by Bazaar; dam, Tibbie Dunbar.	W. L. Pritchard	Sacramento.
Applause, by Three Cheers; dam, Alice M.	Thos. G. Jones	Pleasanton.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Edelweiss	Edelweiss 1
2. Lizzie Dunbar	Lizzie Dunbar 2
3. Grover Cleveland	Grover Cleveland 3

Time—1:14 $\frac{1}{2}$.

RACE No. 2—RUNNING.

California Stake. For three-year olds. Fifty dollars entrance; half forfeit; four hundred dollars added; one hundred dollars to second, fifty dollars to third. One mile and a quarter.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Adeline, by Enquirer; dam, Analyn	D. J. McCarty	San Francisco.
Narcola, by Norfolk; dam, Addie C.	Matt. Storns	Oakland.
Fred Archer, by Thad Stevens; dam, by imp.		
Hercules	Caleb Dorsey	Stanislaus Co.
Jack Brady, by Wildidle; dam, unknown.	Davis Brothers	Copperopolis.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Adeline	Adeline 1
2. Narcola	Narcola 2
3. Fred Archer	Fred Archer 3

Time—2:11 $\frac{1}{2}$.

TRANSACTIONS OF THE

RACE NO. 3—RUNNING.

Juvenile Stake. For two-year olds. Twenty-five dollars entrance; ten dollars forfeit; four hundred dollars added; one hundred dollars to second; third to save stake. Winner of any two-year old race, after August first, to carry three pounds; of two or more, five pounds extra. Three quarters of a mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Surinam, by Joe Hooker; dam, Ada C.	W. M. Murry	Sacramento.
Peregrine, by Jumbo or Hooker; dam, Irene Harding	W. M. Murry	Sacramento.
Carmen, by Wildidle; dam, Nettie Brown	Laurelwood Stable	Santa Clara Co.
Fannie F, by Wildidle; dam, Sally Heart	Thomas Fisher	Coyote.
Snowdrop, by Joe Hooker; dam, Laura Winston	James Garland	Sacramento.
Rosedale, by Joe Hooker; dam, by Joe Daniels	J. B. Chase	San Francisco.

Position at Starting.	Position at Close.
1. Snowdrop	Snowdrop
2. Surinam	Surinam
3. Carmen	Carmen

Time—1:15.

RACE NO. 4—RUNNING.

Free Purse. Three hundred dollars. Winners of any race, after August first, of the value of three hundred dollars, to carry five pounds. Maidens allowed, if three years old, five pounds; if four years old or upwards, fifteen pounds. Mile heats.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mary D, by Wildidle; dam, Sally Heart	Thomas Fisher	Coyote.
Elwood, by Norfolk; dam, Ballonette	James Garland	Sacramento.
Moonlight, by Thad Stevens; dam, Twilight	C. H. Eldred	Sacramento.
Patti, by Wildidle; dam, Nettie Brown	Laurelwood Stable	Santa Clara Co.
Manzanita; sire and dam unknown	J. Cabrera	Fresno.

Position at Starting.	Position at Close.
1. Patti	Patti
2. Moonlight	Moonlight

Time—1:45½; 1:44½; 1:45½.

THURSDAY, SEPTEMBER 8, 1887.

RACE NO. 5—TROTTING.

2:25 Class. Purse, one thousand dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Marin, by Quinn's Patchen; dam, Emigrant ..	P. Farrell	San Francisco.
Woodnut, by Nutwood; dam, Adda	B. C. Holly	Vallejo.
Jane L, by Hamilton's Membrino; dam, by Paul Jones	L. B. Lindsey	Portland, Or.
Joe Artherton, by Artherton; dam, Flora	J. A. Goldsmith	Oakland.

Position at Starting.	Position at Close.
1. Jane L	Jane L. 2 0 1 1 1
2. Woodnut	Woodnut
3. Marin	Marin

Time—2:24½; 2:23; 2:22¾; 2:22; 2:23.

RACE No. 6—TROTTING.

Three-year Old Class. Purse, five hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Flora M, by Elector; dam, Winship	L. A. Richards	Grayson.
Ella, by Electioneer; dam, Lady Ellen	Palo Alto Stock Farm.	San Mateo.
Maiden, by Electioneer; dam, May Queen	Palo Alto Stock Farm.	San Mateo.
Sable Wilkes, by Guy Wilkes; dam, Sable	J. A. Goldsmith	Oakland.
Soudan, by Sultan; dam, Lady Babcock	L. J. Rose	San Gabriel.
<hr/>		
<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Soudan	Sable Wilkes	1 1 1
2. Sable Wilkes	Soudan	2 2 2
<i>Time—2:28; 2:28; 2:27½.</i>		

RACE No. 7—TROTTING.

2:40 Class. Purse, eight hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jennie McCarty, by Patchen Vernon; dam, unknown	A. W. Fink	San Francisco.
Maggie E, by Nutwood; dam, by Patchen, Jr.	J. W. Donathan	San Francisco.
Old Nick, by Electioneer; dam, Stockton Maid	W. B. Bradbury	San Francisco.
Perihelion, by Admiral; dam, Winnie	J. A. Goldsmith	Oakland.
Allo, by Altooner; dam, Nellie	A. C. Davenport	Stockton.
Inez, by The Moor; dam, Katydid	L. J. Rose, Jr.	S. Buenaventura.
<hr/>		
<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Allo	Allo	2 1 5 1 1
2. Old Nick	Old Nick	1 3 1 2 2
3. Perihelion	Perihelion	5 2 2 3 5
4. Maggie	Maggie E	3 4 4 5 3

FRIDAY, SEPTEMBER 9, 1887.

RACE No. 8—TROTTING.

2:27 Class. Purse, eight hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mt. Vernon, by Nutwood; dam, by Chieftain ..	J. A. McCloud	Stockton.
Tempest, by Hawthorne; dam, by Chieftain ..	Harry Whiting	Stockton.
Palitina, by Milton Wardium; dam, Snowstorm ..	L. B. Lindsey	Portland, Or.
Luella, by Chickamauga; dam, unknown	H. Hitchcock	San Francisco.
Maid of Oaks, by McClellan; dam, Thoroughbred ..	A. McDowell	Oakland.
<hr/>		
<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Mt. Vernon	Mt. Vernon	2 1 1 2 1
2. Tempest	Tempest	1 3 5 3 2
3. Luella	Luella	4 2 4 1 4
4. Palitina	Palitina	5 5 2 4 3
<i>Time—2:21½; 2:23½; 2:24¾; 2:21½; 2:26½.</i>		

TRANSACTIONS OF THE

RACE NO. 9—TROTTING.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Daisy S, by Tilton Almont; dam, unknown.....	B. W. Lewis.....	Oakland.
Stamboul, by Sultan; dam, Fleetwing.....	L. J. Rose.....	San Gabriel.
Valentine, by Farrell's Clay; dam, Queen.....	J. H. Kelly.....	San Bernardino.
Black Diamond, by Milton's Gold Dust; dam, Lady Taylor.....	H. Hitchcock.....	San Francisco.
Thapsin, by Berlin; dam, Lady Hubbard.....	E. H. Miller.....	San Francisco.

Position at Starting.

1. Stamboul	1
2. Valentine	2
3. Thapsin	3
4. Black Diamond	4

Position at Close.

Stamboul	1	2
Valentine	5	2
Black Diamond.....	3	3
Thapsin	2	4

RACE NO. 10—TROTTING.

Two-year Old Class. Purse, three hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Memo, by Sydney; dam, Flirt	G. Valensin	San Francisco.
Grandee, by Le Grand; dam, Artherton	J. A. Goldsmith.....	Oakland.

Position at Starting.

1. Grandee.....	1
2. Memo.....	2

Position at Close.

Grandee	1
Memo	2

Time—2:32; 2:31½.

SATURDAY, SEPTEMBER 10, 1887.

RACE NO. 11—RUNNING.

Selling Purse. Three hundred dollars, of which fifty dollars to second. Fixed valuation, one thousand dollars; two pounds for each one hundred dollars below; two pounds added for each one hundred above fixed value. One mile and an eighth.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Elwood, by Norfolk; dam, Bollinette.....	James Garland	Sacramento.
Belshaw, by Wildidle; dam, Susie Williamson.....	Thomas Hazlett	San Francisco.
Laura Gardner, by Jim Brown; dam, Avail.....	Laurelwood Stable.....	Santa Clara Co.
Bolero, by Norfolk; dam, Neapolitan	D. J. McCarty.....	San Francisco.
Rajah, by Euchre; dam, Famosa	Alex. Lewis.....	Salt Lake, U. T.

Position at Starting.

1. Bolero	1
2. Elwood	2
3. Laura Gardner	3

Position at Close.

Laura Gardner	1
Bolero	2
Elwood	3

Time—1:57½.

RACE NO. 12—RUNNING.

The Oakland Stake. For all ages. Fifty dollars entrance; half forfeit. Four hundred dollars added. Second horse, one hundred dollars; third, fifty dollars. One mile and a half.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack Brady, by Wildidle; dam, unknown.....	Davis Bros.	Copperopolis.
Adeline, by Enquirer; dam, Analyn	D. J. McCarty	San Francisco.
John A, by Monday; dam, Lady Clara.....	Harry Whiting	Stockton.
Lizzie Dunbar, by Bazaar; dam, Tibbie Dunbar	W. L. Pritchard	Sacramento.
Narcola, by Norfolk; dam, Addie C	Matt. Storns	Oakland.

Position at Starting.	Position at Close.
1. Adeline	Adeline
2. Lizzie Dunbar	Lizzie Dunbar
3. Narcola	Narcola

Time—2:37½.

RACE NO. 13—RUNNING.

Golden Gate Stake. For two-year olds; twenty-five dollars entrance; ten dollars forfeit; four hundred dollars added; one hundred dollars to second; third to save stake. Winner of any two-year old race, after August first, to carry three pounds; of two or more, five pounds extra; of Juvenile Stake at this meeting, three pounds additional penalty. Seven eighths of a mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ed McGinness, by 2d Grimsted; dam, Jennie G.	H. L. Samuels	Los Angeles.
Snowdrop, by Joe Hooker; dam, Laura Winston	James Garland	Sacramento.
Fannie F, by Wildidle; dam, Sally Heart.....	Thomas Fisher	Coyote.
Surinam, by Joe Hooker; dam, Ada C	W. M. Murry	Sacramento.

Position at Starting.	Position at Close.
1. Ed McGinness	Ed McGinness
2. Snowdrop	Snowdrop
3. Fannie F	Fannie F

Time—1:29½.

RACE NO. 14—RUNNING.

Free Purse. Four hundred dollars. For all ages; fifty dollars to second. Horses not having won at this meeting allowed five pounds; horses that have not run second or better allowed ten pounds. Three-quarter mile heats.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mary D, by Wildidle; dam, Sally Heart.....	Thomas Fisher	Coyote.
Grover Cleveland, by Monday; dam, Robin Girl	Matt. Storns	Oakland.
Ninena, by Jim Brown; dam, Mamie Hubbard.	B. C. Holly	Vallejo.
Johnny Gray, by Shilo; dam, Margery	Owen Bros.	Fresno.
Notidle, by Wildidle; dam, Bonanza	M. F. Tarpey	Alameda Co.

Position at Starting.	Position at Close.
1. Grover Cleveland	Grover Cleveland
2. Notidle	Notidle
3. Johnny Gray	Johnny Gray

Time—1:13½; 1:14½.

MONDAY, SEPTEMBER 12, 1887.

RACE No. 15—TROTTING.

Free for all. Purse, one thousand dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Arab, by Artherton; dam, Lady Hamilton.....	Orrin Hickok.....	San Francisco.
Menlo, by Nutwood; dam, by Hercules.....	Wm. Dwyer.....	San José.
Adair, by Electioneer; dam, Addie Lee.....	Wilbur Smith.....	.....
Lot Slocum, by Electioneer; dam, —.....	C. Green.....	San Francisco.

Position at Starting.

1. Menlo.....	.....
2. Adair.....	.....
3. Lot Slocum.....	.....
4. Arab.....	.....

Position at Close.

Arab.....	4	1	3	1	0	1
Adair.....	1	2	2	3	0	2
Lot Slocum.....	3	4	1	2	4	3
Menlo.....	2	3	4	4	3	r. o.

Time—2:20 $\frac{1}{4}$; 2:19; 2:18; 2:18; 2:18; 2:21 $\frac{1}{2}$.

RACE No. 16—PACING.

Free for all. Purse, six hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Killarney, by Black Ralph; dam, Eclipse.....	P. Fitzgerald.....	.....
Ella S.....	A. C. Smith.....	.....
Billy Bunker.....	D. J. Sayer.....	.....
Pocahontas.....	A. McDowell.....	.....

Position at Starting.

1. Killarney.....	.....
2. Billy Bunker.....	.....
3. Ella S.....	.....
4. Pocahontas.....	.....

Position at Close.

Ella S.....	3	1	1	1
Billy Bunker.....	1	2	3	2
Pocahontas.....	4	4	2	2
Killarney.....	2	3	4	1

Time—2:22 $\frac{1}{4}$; 2:23 $\frac{1}{2}$; 2:23 $\frac{1}{4}$; 2:27.

RACE No. 17—TROTTING.

Stanford Stake. For three-year olds.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sable Wilkes, by Guy Wilkes; dam, Sable.....	J. A. Goldsmith.....	Oakland.
Soudan, by Sultan; dam, Lady Babcock.....	L. J. Rose.....	San Gabriel.

Position at Starting.

1. Sable Wilkes.....	.....
2. Soudan.....	.....

Position at Close.

Sable Wilkes.....	1	1
Soudan.....	2	2

Time—2:25 $\frac{1}{2}$; 2:20; 2:26 $\frac{1}{4}$.

TUESDAY, SEPTEMBER 13, 1887.

RACE NO. 18—PACING.

2:40 Class. Purse, one hundred and fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Damiana	George Bayliss .....	.....
Prussian Boy	P. Brander .....	.....
Emma Anderson	A. J. Fleming .....	.....
Loretta	R. Smith .....	.....

<i>Position at Starting.</i>		<i>Position at Close.</i>		
1. Damiana	Damiana	1	2	1
2. Prussian Boy	Prussian Boy	2	1	2
3. Emma Anderson	Emma Anderson	3	3	3

Time—2:36½; 2:29¾; 2:32; 2:31½.

RACE NO. 19.

Made up race, for purse of one hundred and fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Peacock, by Whipple's Hambletonian	George Bayliss .....	.....
Carl, by Hidalgo	H. Hitchcock .....	.....
Wells Fargo, by G. M. Patchen, Jr.	J. H. Penman .....	.....

<i>Position at Starting.</i>		<i>Position at Close.</i>				
1. Wells Fargo	Peacock	2	1	2	1	2
2. Carl	Carl	3	2	1	2	1
3. Peacock	Wells Fargo	1	3	dis.		

Time—2:25¼; 2:24¼; 2:27½; 2:25½; 2:27½; 2:27½.

TRANSACTIONS

OF THE

SECOND DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of San Joaquin, Tuolumne, Stanislaus, and Merced.

OFFICERS OF THE ASSOCIATION.

L. U. SHIPPEE	President.
J. M. LA RUE	Secretary.
A. W. SIMPSON	Treasurer.

DIRECTORS.

FERD. ARNOLD	Stockton.
B. F. LANGFORD	Lodi.
LOUIS GERLACH	Stockton.
JOHN E. MOORE	Stockton.
R. C. SARGENT	Lodi.
JAMES A. SHEPHERD	Lathrop.
L. U. SHIPPEE	Stockton.
WM. H. SNOW	Collegeville.

CORRESPONDING MEMBERS FOR 1887.

Calaveras County—

T. J. MATTESON	Murphys.
H. A. MESSENGER	Campo Seco.

Tuolumne County—

HUGH QUINN	Chinese Camp.
M. HARRIMAN	Sonora.

Stanislaus County—

F. H. ROSS	Modesto.
A. BEITH	Oakdale.

Mariposa County—

DANIEL WAGNER	Coulterville.
G. G. GOUCHER	Mariposa.

Merced County—

A. CHAMBERLAIN	Merced.
J. J. STEVENSON	Hills Ferry.

Fresno County—

A. B. BUTLER	Fresno.
H. C. DALTON	Berenda.

Tulare County—

E. GIDDINGS	Lemoore.
E. JACOBS	Visalia.

Kern County—

SOL. JEWETT	Bakersfield.
GEO. F. THORNTON	Bakersfield.

REPORT.

STOCKTON, December 13, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Second District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

J. M. LA RUE, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Balance	\$695 28	
For life membership account.....	21,415 00	
County appropriation	550 00	
For sale of hay.....	535 00	
For sale of single tickets at Pavilion.....	5,706 30	
For sale of single tickets at Park	4,046 20	
For sale of grand stand tickets at Park.....	1,256 50	
Entrance fees to races.....	7,695 00	
For exhibitors' fees.....	725 00	
For premium discounts	312 82	
For sale of privileges.....	4,841 00	
Donations per appended list.....	200 22	
On overdraft account Stockton Savings and Loan Society.....	5,948 74	
From other sources	31 30	
		\$53,958 36

Expenditures.

Premiums and purses of 1886	\$160 50	
Expenses, account of 1886.....	487 23	
Entrance fees returned.....	120 00	
General expenses of 1887	7,401 12	
Purses of 1887.....	10,409 50	
Premiums of 1887, to date.....	2,158 73	
On account of Pavilion contract.....	29,000 00	
On account of Pavilion building	1,682 13	
On account of Pavilion furniture.....	1,553 58	
Insurance on Pavilion	784 55	
Interest on overdraft account	199 22	
Cash	1 80	
		\$53,958 36

DONATIONS DURING 1887.

Ladies' Committee of One Hundred. \$62 22	A. B. Sperry	\$27 00
Miss A. C. Clapp..... 4 00	R. C. Sargent.....	20 00
I. D. Holden..... 5 00	P. Musto.....	2 00
Dr. W. H. Mays	N. Nevin.....	19 00
Mrs. Chas. W. Yolland..... 5 00	Mail Publishing Company.....	10 00
Mrs. G. S. Allard..... 5 00	J. C. Bowden.....	7 00
Wm. P. Miller..... 15 00		
L. Gerlach		
4 00		\$200 22

ANNUAL ADDRESS.

By HON. J. P. IRISH.

Hon. J. P. Irish was introduced by President Shippee. Mr. Irish began by a tribute of praise to the spirit of enterprise and appreciation of beauty, that prompted the erection and decoration of the Pavilion. It was an evidence of the wealth and liberality of Stockton and San Joaquin County, to which he also paid a high compliment. Referring to the merits of the county, the district, and the State, he said we have enough of wealth, enough to delight life, and these are easy of attainment, all we want to do is to let the world know what our grand advantages are, that those who bear their share of the burdens of life may also reap richly of its blessings, and to welcome them when they come to seek them. He instanced the case of a visitor to another county, who asked what land was selling for and was answered: "We don't sell it. We know when we have a good thing and propose to keep it." Though the principle of

"When you get a good thing
Save it, save it;
When you catch a black cat
Shave it to the tail,"

Was good enough, it might be overdone. Though we had good land, the best in the world, good to keep, it was a good policy to be liberal in selling to new-comers. We want more people in this Eden. God did not think there were enough in the Eden of old and had arranged for an increase almost at once. It was therefore good policy to build such a structure as this, and have such expositions as this, as the best testimonies of the wealth of this Eden of ours, and to welcome others to share it with us. He dwelt upon the great advantages of agriculture in general, in which the largest part of mankind are engaged and which is the greatest source of wealth. This source of wealth exists in California in a greater degree than anywhere else in the world, and the world should be made aware of it.

San Joaquin County has its full proportion of this great wealth, and has a greater area than the whole State of Rhode Island, but that State with all the appliances that art could command, if applied to the soil, could never look as beautiful or be as productive as California, yet Rhode Island supported a population of four hundred thousand. When that State can support so many why should not San Joaquin become the imperial county of the United States? Within this county could be grown the cotton, wool, and silk to clothe them, and all the other products for the comfort and luxury of man, and grown in profusion. With these advantages, if San Joaquin will so determine, she can have as great a population as Rhode Island, and support them with greater ease, and that within the next ten years.

Referring to the increase of Southern California's population, he said it but reflected what San Joaquin could do if its advantages were fully made known to the world. That was the secret of success in Southern California.

We did not want mere boom. The county was good enough without it, and had merit that was far better than boom. The watermelons of Lodi were alone sufficient to make the county as famous as Sonoma and Napa Counties are for their wines, and what need be done is to make the facts known to the world as those counties had done. Make the possibilities known by showing facts accomplished. He spoke at length on the advantages of irrigation, vast increase of resources resulting from it, and the law under which it could be made a public work, and urged that no time be lost in taking advantage of it. He would avoid statistics, because Californians were familiar with them, and eastern people would not believe them without seeing the facts they were based upon. They were too great for ordinary belief without experience, and were a familiar subject; he therefore closed by another glowing tribute to the county, whose future he predicted would realize the fondest hopes of its people, for these hopes hardly equaled the merits.

ADDRESS OF GOVERNOR WATERMAN.

President Shippee introduced Governor Waterman.

He had seen a sample of what San Joaquin County could do in the State Fair at Sacramento, where he had been on the committee that awarded it the premium. Yet it did not prepare him for the magnificent display in this Fair. As he viewed these magnificent agricultural exhibitions in the State, he thought of California as it was in 1850, when people paid a dollar or a dollar and a half each for onions, and only bought potatoes once a week; when they hadn't thought of agriculture, and had but little means of following it. He described his two-acre home on the Feather River, which was valued principally for its spring. They never thought of mining there, but after he left some fellow came there and made a fortune mining it. He had a five-acre pasture which he thought much of as a pasture, but another fellow made a fortune there. We didn't begin to know the wealth we had, or what a State we had as yet.

Southern California's success, to which Mr. Irish had referred, was due to prompt action. There they were in the habit of conceiving a project one moment and putting it into execution the next. They had built a railroad in fifteen days, and did everything that way. He was much attached to Southern California, and thought much of California as a whole. There was but one California in the world, and we have it here. We have sixty or seventy millions of our own people to back us, and more across the Atlantic who want to come, but we wish they would stay away. We want this great land of ours for our posterity, and want it to be a rich heritage. We want California to be and to see it the greatest in the Union, as it deserves and has the ability to become. What could be produced in this State, we did not ourselves know. Whatever we have tried has succeeded well, and we have tried much, but much is still to be tried to develop our wonderful resources. He hoped and believed we should see California realize all that he had prophesied for it.

A round of hearty applause followed these remarks, which were delivered without any attempt at oratory, but in a very earnest, business-like tone, that evinced how earnest was his desire to see the State win the place it deserved.

POEM,

DELIVERED BEFORE THE SAN JOAQUIN VALLEY AGRICULTURAL ASSOCIATION, AT THE DEDICATION OF THEIR NEW PAVILION, SEPTEMBER 29, 1887.

By E. J. MARSTERS, the Poet of the Pacific.

Along the Nile in ancient hours,
Where Egypt saw her grandeur rise,
Her works of art, her deeds of power,
Her stars of glory in the skies;
As all her own, as laid in light,
Her day, her sun, her moon, her night.

There in her power she reigned and ruled,
And gave the world her laws of right;
And there her sons in warfare schooled,
And bade their arms declare their might,
And all her power, and glory gave,
To sons, to subjects, and to slave.

Her power declined, her glory fled;
Her sons were given change and chains;
Her sovereigns lost, her greatness dead,
And all her grandeur, all her gains
Were cast as spoils, upon the sea,
Where death commands the soul be free.

This is the lesson of the past;
This is the way the world must move;
And thus lines of greatness cast,
And thus the laws of faith and love
Are ever broken, ever lost,
In blood and blackness, as the cost.

But power must rise and yet declare
How Progress holds the world at will;
That here, that there, and everywhere,
Its power is moving, rolling still,
And on the wings of love and right
Moves grand, eternal, through the night—

Of wrong and madness in its sway;
Of vengeance in its march of pain;
Of error through its night and day;
Of sorrow through its storm of rain,
And o'er the world, as light of heaven,
Rolls ever wide, in glory given.

Rise, Progress, rise! and on the hour
Declare thy majesty and law;
Thy wisdom, strength, and fervent power,
As breath for genius e'er to draw,
And o'er the world in love and light,
Declare thy day, declare thy night.

As never ending, ne'er as lost,
As ever rising, ever fair,
And all thy waves of light as tossed,
As rolling waves of light and air,
And far as light and glory bears,
Thy crown of light that genius wears.

Descend! Oh, come, and wander here;
 Here all thy grandeur is displayed!
 Behold these arches wide and fair,
 These wreaths of glory as arrayed;
 These pillars, columns, dome as given,
 That points the way from earth to heaven.

Come back from where thy strength has lain,
 And count thy glories once again;
 Call all thy wonders lost as vain,
 And all thy past as winter's rain;
 Come back from Egypt's sands, and bear
 Thy crown again, thy stars as fair—

As erst they were when o'er the world,
 As held by the eternal hand,
 The standard thou hast seen unfurled,
 And borne by thee in every land,
 In every clime where glory weeps,
 Where love reclines, or honor sleeps.

Hold all thy honors fair for man;
 Hold all thy glory, all thy will,
 And ever on, in all thy plan,
 Stand battling, rising, conquering still,
 And in the march of love and right,
 Stand victor, conqueror, in thy might.

The world has moved, is moving still,
 And greatness holds its arms as wide,
 Thy will, thy law, to e'er fulfill,
 O'er all the world, on every tide,
 And where the eastern lands are seen,
 In faded light, and wasted sheen—

There thou hast roamed, as in the past,
 There glory gave thee place and power;
 There all thy light, thy love was cast,
 And there the brightness of thy hour,
 And there, at rest in sweet repose,
 Thy dust, thy flowers, thy wreath of woes.

Call Cheops from the dust, and give
 The world his genius and his power;
 Command his soul of light to live,
 His glory to adorn the hour,
 And grand as pyramids to rise,
 His star of greatness to the skies.

The builders who in granite laid
 As massive monuments, to stand,
 Hath builded well, as hand, or spade,
 Or power, or genius, laid or planned;
 Or called to action grand and fair,
 As Egypt's deathless glories are.

We see in majesty as reared,
 The wonders of our day and age,
 Where desolation once appeared,
 And traced its lines on every page,
 And gave to all a scene of woe;
 A wave of darkness long to flow.

But genius woke, and wealth awoke,
 And broke the slumber of the past,
 And with its arm in mighty stroke,
 Declared the waves of darkness past,
 And o'er the plain, as late was laid,
 The footsteps of retiring trade.

For eastward here the tide was driven,
 The iron way was laid as there,
 Where wealth, and power, as long had striven
 To bend the masses to their prayer,
 And call, and bear, as on the tide,
 Our hopes, our wealth, as following wide,—

Perchance, as theirs, perchance as great,
Yet uncombined in force and might;
Nor held for traffic in the State;
Nor yet as clouds to dim the night,
Yet held as fair for right and good,
As all the rolling waves of blood—

That sweep and surge above the world,
As waves of ever-ruling right,
As o'er oppression ever hurled,
To hush the voice of sorrow's night,
And call for greatness, glory, power,
As triumph in triumphant hour.

When genius holds the reins to guide
And bid the world to wake once more,
And broader waves of light to ride
The seas of love from shore to shore,
And hold in grandeur, light divine,
The souls of all, as stars to shine.

As stars of God's, as stars of light,
And cast transcendent o'er the scene
In glory's sky, o'er sorrow's night,
And all the vales as laid between
The earth and heaven, the day and night,
The sun and clouds, the darkness light.

Come, Progress, come! we call again,
The world has found thy genius here,
Thy love controls the soul of pain,
And drives it oft to bitter tear;
Come in thy majesty, and bear
Thy crown, as here, for all to wear.

Thy watchword rings adown the line,
Thy soul sweeps as a rolling wave,
Thy spirit breathes a breath divine,
Thy glory rising o'er the grave;
Comes, as by living power decreed,
And cast a rolling wave, as freed—

From all the froth and foam of life,
Its hate, its cares, its surging fire,
Its ever-changing sea of strife;
Yet bearing all the soul's desire,
And from the hand of God as given,
As rolling waves of love and heaven.

Who called thee? Who inspired thy soul?
Who gave the way for thee to tread?
Who gave thy waves a sea to roll.
And stamped thy genius o'er the dead?
They stand with us, they linger near,
And all their hopes, their glory here.

Oh, men of progress, men of power,
Thy souls were cast for all the race,
Thy glory greater than the hour,
Thy wealth, thy will, holds e'er apace
With all the rolling waves of heaven,
In love decreed, in glory given.

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGHbred HORSES—STALLIONS.		
<i>Three Years Old and Over.</i>		
Grover Cleveland	Matt. Storns	San Francisco.
<i>Two Years Old.</i>		
Bolero	D. J. McCarty	San Francisco.
<i>One Year Old.</i>		
Duke of Stanislaus	Samuel Miller	Modesto.
Surento	D. J. McCarty	San Francisco.
MARES OR GELDINGS.		
<i>Three Years Old and Over.</i>		
Narcola	Matt. Storns	San Francisco.
Adeline	D. J. McCarty	San Francisco.
<i>Two Years Old.</i>		
Rosedale	Matt. Storns	San Francisco.
<i>Suckling Filly.</i>		
Gertrude	L. U. Shippee	Stockton.
Lady Hooker	L. U. Shippee	Stockton.
CLASS II—ROADSTERS.		
<i>Four Years Old and Over.</i>		
Hawthorne	L. U. Shippee	Stockton.
Lynwood	Putnam Visser	Stockton.
Kantaha	Caleb Dorsey	Oakdale.
George S. Evans	Levi Carter	Ceres.
Algona, Jr.	Samuel Hewlett	Stockton.
<i>Three Years Old and Over.</i>		
Steve Whipple	C. E. Neehan	Bantas.
Nephew, Jr.	Mrs. M. B. Odell	Stockton.
Cleveland	B. R. Prince	Angel's Camp.
Ebony	Caleb Dorsey	Oakdale.
Reliance, Jr.	J. K. Baldwin	Belota.
Hiram Wilkes	W. H. Post	Stockton.
<i>Two Years Old and Over.</i>		
Friar Wilkes	E. J. Hughes	Linden.
Colonel	S. P. Bailey	Stockton.
Hendricks	B. R. Prince	Angel's Camp.
Young Comet	J. W. Allard	Oakdale.
.....	L. M. Morse	Lodi.
Echo, Jr.	Samuel Hewlett	Stockton.
<i>One Year Old.</i>		
Turlock	S. J. Allen	Turlock.
Governor	C. Howe	Stockton.
.....	A. J. Lomasney	Atlanta.
Prince	F. B. Haslam	Stockton.
Pericles	W. R. Bailey	Stockton.
Charles Vernon	J. R. Clapp	Stockton.
Horner	L. M. Morse	Lodi.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
Hamlet	L. M. Morse	Lodi.
Combination	A. McDowell	Pleasanton.
.....	W. H. Parker	Stockton.
MARES OR GELDINGS.		
<i>Four Years Old and Over.</i>		
Charley	Chas. Wakefield	Stockton.
Mug	C. Lomasney	Stockton.
Amanda	A. J. Lomasney	Atlanta.
San Joaquin Belle	W. Buttrick	French Camp.
Nellie	F. B. Haslam	Stockton.
Frank	R. C. Sargent	Stockton.
<i>Three Years Old and Over.</i>		
Cleo	A. C. Davenport	Stockton.
Little Ned	E. A. Nevin	Stockton.
Bohemian Girl	R. E. Stowe	Stockton.
Gypsy	C. Lomasney	Stockton.
Amy H.	Saml. Hewlett	Stockton.
<i>Two Years Old.</i>		
Hawthorne Maid	L. U. Shippee	Stockton.
Ariel	E. A. Nevin	Stockton.
Carrie Vernon	J. A. McCord	Stockton.
Daisy Vernon	J. A. McCord	Stockton.
Nora Vernon	J. A. McCord	Stockton.
<i>Yearling Fillies.</i>		
Flora	C. Lomasney	Stockton.
Jo	Lucy P. Goff	Stockton.
Sarah Vernon	Geo. W. French	Stockton.
SPAN OF MATCHED ROADSTERS.		
Lady and Mollie	John F. Visser	Stockton.
Ashland and Little Boy	D. J. McCarty	San Francisco.
Laden and Basswood	L. U. Shippee	Stockton.
George and Lady Washington	R. C. Sargent	Stockton.
SUCKLING COLT.		
Pedro	C. Lomasney	Stockton.
Ivanhoe	L. U. Shippee	Stockton.
.....	Putnam Visser	Stockton.
Billy Vernon	W. French	Stockton.
Echo, Jr.	Samuel Hewlett	Stockton.
SUCKLING FILLY.		
May W	C. W. Ward	Stockton.
Flora	L. U. Shippee	Stockton.
Sultana	L. U. Shippee	Stockton.
.....	Putnam Visser	Stockton.
.....	Putnam Visser	Stockton.
Oasis	Lucy P. Goff	Stockton.
CLASS III—HORSES FOR ALL PURPOSES—STALLIONS.		
<i>Three Years Old and Over.</i>		
Pompey	Geo. A. Ramage	Haywards.
Young Champion	Chas. Hunting	Acampo.
Comet	Smith Acker	Oakdale.
Young Suffolk	G. C. Holman	Lockeford.
Midlothian	F. B. Shaw	Salina, Kas.
Romeo	F. B. Shaw	Salina, Kas.
Francis	F. B. Shaw	Salina, Kas.
Black Branch	J. A. Robinson	Snelling.
Prince	P. G. Sharp	Stockton.
Prince Belone	Asa Clark	Stockton.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Two Years Old.</i>		
Tam O'Shanter	W. A. Smith	Peter.
Doctor	F. R. Shaw	Salina, Kas.
Pandy	F. R. Shaw	Salina, Kas.
Major	P. G. Sharp	Stockton.
<i>One Year Old.</i>		
Nephew, Jr.	N. Nevin	Stockton.
Jennie Vernon	Alex. Gross	Stockton.
Joe	J. C. Bowden	Stockton.
<i>Suckling Colts.</i>		
Logan	N. Nevin	Stockton.
Priam Jo	W. E. Morris	Stockton.
Puck	Samuel Hewlett	Stockton.
MARES.		
<i>Three Years Old and Over.</i>		
Pet	N. M. Flower	Copperopolis.
Flora	N. Nevin	Stockton.
Mayflower	W. French	Stockton.
Emma G	L. Gerlach	Stockton.
Nancy	W. E. Morris	Stockton.
Clara G	L. Gerlach	Stockton.
Tanbark	Samuel Hewlett	Stockton.
Sarah	Samuel Hewlett	Stockton.
<i>Two Years Old.</i>		
Bessie	William Thomas	Douglas Flat.
Nellie Vernon	Alex. Gross	Stockton.
Jane	P. G. Sharp	Stockton.
Nellie G	L. Gerlach	Stockton.
<i>One Year Old.</i>		
Victoria	William Thomas	Douglas Flat.
Effie	P. G. Sharp	Stockton.
Rosa G	L. Gerlach	Stockton.
<i>Suckling Filly.</i>		
Jennett	Samuel Hewlett	Stockton.
CLASS IV—DRAFT HORSES—STALLIONS.		
<i>Three Years Old and Over.</i>		
Duke	Jas. Roberts	Irvington.
Prince Albert	Wm. Buttrick	French Camp.
Young St. Lawrence	E. R. Elliott	Lodi.
Eureka	C. K. Bailey	Stockton.
Fasian (1990)	C. K. Bailey	Stockton.
Wideawake, Jr.	Levi Carter	Ceres.
Lord Pollock 2d	F. R. Shaw	Salina, Kansas.
Sir Leonard	F. R. Shaw	Salina, Kansas.
Sutyon	Chas. Grupe	Stockton.
Maximilian, Jr.	J. W. Kerrick	Stockton.
<i>Two Years Old.</i>		
Arab	E. R. Elliott	Lodi.
Sir Francis	F. R. Shaw	Salina, Kansas.
<i>One Year Old.</i>		
Sampson	A. McCormick	Linden.
Prince	Jas. Roberts	Irvington.
Dick	E. R. Elliott	Lodi.
<i>Suckling Colt.</i>		
Roxey	A. B. Sperry	Stockton.
Jas. Blaine, Jr.	Levi H. Nicewonger	French Camp.
Rock	Levi H. Nicewonger	French Camp.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
MARES.		
<i>Three Years Old and Over.</i>		
Jessie	Lew. Martin	Stockton.
Princess	A. B. Sperry	Stockton.
Milkmaid	A. B. Sperry	Stockton.
Princess Beatrice	F. R. Shaw	Salina, Kansas.
Lady Smith	F. R. Shaw	Salina, Kansas.
Kit	J. W. Kerrick	Stockton.
Lucy	J. W. Kerrick	Stockton.
<i>One Year Old.</i>		
Francis	A. B. Sperry	Stockton.
<i>Suckling Filly.</i>		
Vic	U. Martin	Stockton.
Maggie	E. R. Elliott	Lodi.
<i>Matched Draft Team Owned by Exhibitor.</i>		
Princess Beatrice and Lady Smith	F. R. Shaw	Salina, Kansas.
Princess and Milkmaid	A. B. Sperry	Stockton.
CLASS V—CARRIAGE ANIMALS.		
<i>Double Carriage Team.</i>		
Jim and Bill	C. Hunting	Acampo.
Mem and Jack	R. W. Russell	Stockton.
.....	Wm. Ziglecoff	Acampo.
<i>Single Carriage Team.</i>		
Dick	S. P. Bailey	Stockton.
<i>Shetlands.</i>		
Matched span	D. J. McCarty	San Francisco.
One saddle pony	D. J. McCarty	San Francisco.
CLASS VI—MULES.		
<i>Span Owned by Exhibitor.</i>		
Mollie and Collie	L. U. Shippee	Stockton.
Doc and Sam	F. B. Haslam	Stockton.
CLASS VII—JACKS.		
<i>Three Years Old and Over.</i>		
Big Tom	Henry Hamilton	Stockton.
Jim	T. P. Heath	Stockton.
<i>Two Years Old.</i>		
Fanny	L. U. Shippee	Stockton.
Frank	L. U. Shippee	Stockton.
.....	Henry Hamilton	Grayson.
<i>One Year Old.</i>		
Washington Eclipse, Jr.	Levi Carter	Ceres.
<i>Suckling Jack.</i>		
January	L. U. Shippee	Stockton.
Cap	L. U. Shippee	Stockton.
JENNIES.		
<i>Three Years Old and Over.</i>		
Lummix	L. U. Shippee	Stockton.
Betsey	L. U. Shippee	Stockton.
<i>Two Years Old.</i>		
Sister	L. U. Shippee	Stockton.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS VIII—CATTLE—DURHAMS—BULLS.		
<i>Three Years Old and Over.</i>		
3d Kirklivington of Forest Home.....	Col. C. Younger.....	San José.
<i>One Year Old.</i>		
23d Kirklivington.....	Col. C. Younger.....	San José.
<i>Under One Year.</i>		
29th Duke of Kirklivington of Forest Home....	Col. C. Younger.....	San José.
COWS.		
<i>Three Years Old and Over.</i>		
10th Rose of Forest Home.....	Col. C. Younger.....	San José.
14th Dolly.....	Col. C. Younger.....	San José.
<i>Two Years Old.</i>		
23d Red Dolly.....	Col. C. Younger.....	San José.
<i>One Year Old.</i>		
8th Oxford Rose.....	Col. C. Younger.....	San José.
<i>Heifer Calf.</i>		
11th Oxford Rose.....	Col. C. Younger.....	San José.
CLASS X—JERSEYS.		
<i>One Year Old.</i>		
Sneath, Jr.....	W. A. French.....	Stockton.
CLASS XI—AYRSHIRES, HEREFORDS, AND HOLSTEINS.		
AYRSHIRES—BULLS.		
<i>Two Years Old and Over.</i>		
Ethelbert (4313).....	Geo. Bement & Son.....	Redwood City.
<i>One Year Old.</i>		
Lord Faxon (4314).....	Geo. Bement & Son.....	Redwood City.
<i>Calf Under One Year.</i>		
Red Mikado (4315).....	Geo. Bement & Son.....	Redwood City.
Hotspur.....	Geo. Bement & Son.....	Redwood City.
COWS.		
<i>Three Years Old and Over.</i>		
Elaine (7401).....	Geo. Bement & Son.....	Redwood City.
Marion (7408).....	Geo. Bement & Son.....	Redwood City.
Sybilla (7809).....	Geo. Bement & Son.....	Redwood City.
<i>Two Years Old.</i>		
Sylph (8633).....	Geo. Bement & Son.....	Redwood City.
<i>One Year Old.</i>		
Ethel Berta (9519).....	Geo. Bement & Son.....	Redwood City.
<i>Heifer Calf, Under One Year.</i>		
Faxonia (9521).....	George Bement & Son.....	Redwood City.
HOLSTEINS—BULLS.		
<i>Three Years Old and Over.</i>		
Sedro (3168).....	F. H. Burke.....	Menlo Park.
<i>Two Years Old.</i>		
Kingsbury (371).....	F. H. Burke.....	Menlo Park.
Billy Taylor (1326).....	F. H. Burke.....	Menlo Park.
Pio Pico.....	W. H. Mays.....	Stockton.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>One Year Old.</i>		
Omaha (3229)	F. H. Burke	Menlo Park.
Von Moltke (3225)	F. H. Burke	Menlo Park.
<i>Calf, Under One Year.</i>		
King of Menlo (6497)	F. H. Burke	Menlo Park.
COWS.		
<i>Three Years Old and Over.</i>		
Lena Witt Menlo (284)	F. H. Burke	Menlo Park.
Sylpha (6964)	F. H. Burke	Menlo Park.
Kollie Lincoln (5696)	F. H. Burke	Menlo Park.
Thissa (9679)	F. H. Burke	Menlo Park.
Sebrigje	Joseph Adams	Stockton.
<i>Two Years Old.</i>		
Edna of Troy	F. H. Burke	Menlo Park.
<i>One Year Old.</i>		
Wiscassett	F. H. Burke	Menlo Park.
<i>Heifer Calf, Under One Year.</i>		
Princess Trintjo (7837)	Joseph Adams	Stockton.
.....	F. H. Burke	Menlo Park.
HEREFORDS—BULLS.		
<i>One Year Old.</i>		
Duke of Hereford	James Kay	Sacramento.
<i>Under One Year.</i>		
2d Novelist	James Kay	Sacramento.
COWS.		
<i>Three Years Old.</i>		
Bountiful	James Kay	Sacramento.
Gaudy	James Kay	Sacramento.
<i>Two Years Old.</i>		
Duchess	James Kay	Sacramento.
Dot	James Kay	Sacramento.
<i>One Year Old.</i>		
Sylvia	James Kay	Sacramento.
Pretty Maid	James Kay	Sacramento.
<i>Calf, Under One Year.</i>		
Brody	James Kay	Sacramento.
CLASS XII—GRADED CATTLE—COWS.		
<i>Three Years Old and Over.</i>		
Bessie F	W. A. French	Stockton.
Jennie	Samuel Hewlett	Stockton.
.....	Samuel Hewlett	Stockton.
CLASS XIII—HERD—DURHAMS.		
3d Kirke	Col. C. Younger	San José.
10th Rose of Forest Home		
14th Dolly		
4th Oxford Rose		
23d Red Dolly		
HERD—AYRSHIRES.		
Ethelbert (4313)	Geo. Bement & Son	Redwood City
Elaine (7401)		
Sybilla (7809)		
Sylph (8633)		
Ethel Berta (9519)		

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
HERD—HOLSTEIN.		
Selma (3168).....	F. H. Burke.....	Menlo Park.
Lena Wit Menlo (2840).....		
Kollie Lincoln (5696).....		
Thissa (9079).....		
Sylpha (9264).....		
HERD—HEREFORDS.		
Duke of Hereford.....	James Kay.....	Sacramento.
Bountiful.....		
Dor.....		
Countess.....		
Duchess.....		
CLASS XV—SHEEP.		
Southdown ram (Dick).....	Geo. Bement & Son.....	Redwood City.
Two Southdown lambs.....	Geo. Bement & Son.....	Redwood City.
Two pens Shropshire.....	Henry Fisher.....	Stockton.
CLASS XVI—SWINE.		
<i>Essex and Berkshire Boars.</i>		
Black Dick.....	L. U. Shippee.....	Stockton.
Prince Albert.....	C. A. Stowe.....	Stockton.
Stockton Chief.....	A. B. Sperry.....	Stockton.
<i>Sows.</i>		
.....	L. U. Shippee.....	Stockton.
Peggy.....	C. A. Stowe.....	Stockton.
Nellie.....	A. B. Sperry.....	Stockton.
<i>Sow and Four Pigs.</i>		
Queen Bess and eight pigs.....	C. A. Stowe.....	Stockton.
CLASS XVII—POULTRY.		
Two pair Plymouth Rocks.....	L. U. Shippee.....	Stockton.
One coop Plymouth Rocks.....	J. C. Bowden.....	Stockton.
Three pair Brown Leghorns.....	W. A. French.....	Stockton.
One pair Brown Leghorns.....	Wm. Hickox.....	Stockton.
One pair Brown Leghorns.....	J. Sarles.....	Stockton.
One pair Bantams.....	Wm. Hickox.....	Stockton.
One pair Bantams.....	J. Sarles.....	Stockton.
One coop Bantams.....	J. C. Bowden.....	Stockton.
One pair Bantams.....	J. C. Bowden.....	Stockton.
<i>Geese.</i>		
One pair Toulon.....	F. H. Burke.....	Menlo Park.
<i>Turkeys.</i>		
One trio Bronze turkeys.....	L. U. Shippee.....	Stockton.
One pair Japanese turkeys.....	W. A. French.....	Stockton.

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—FARM PRODUCTS.		
Bale of hops.....	J. Putman.....	Clements.
Bale of hops.....	G. C. Holman.....	Lockeford.
Walnuts, English.....	S. Y. Strait.....	Stockton.
Five pounds soft-shelled almonds.....	Mrs. C. C. Castle.....	Stockton.
Five pounds soft-shelled almonds.....	Mrs. Joseph Hale.....	Stockton.

SECOND DEPARTMENT—Continued.

Article Exhibited.

Exhibitor:

P. O. Address.

CLASS II—VEGETABLES.

Largest variety of vegetables raised on one ranch, exhibited by producer
 Largest exhibit of vegetables, fruit, etc., by one person
 Largest exhibit of vegetables, fruit, etc., by one person
 Largest exhibit of vegetables, fruit, etc., by one person

Mrs. C. C. Castle Stockton.
 John Elliott Stockton.
 J. D. Huffman Lodi.
 C. V. Thompson Stockton.

CLASS III—GRAIN AND GRASSES.

Thirty bundles of grain, not less than seven varieties
 Most artistically arranged display of grain
 Most artistically arranged display of grain

J. D. Huffman Lodi.
 J. D. Huffman Lodi.
 Mrs. M. Netz Stockton.

CLASS V—HORTICULTURAL DEPARTMENT.

Largest and best collection of apples
 Collection of apples
 Collection of apples
 Collection of pears
 Collection of pears
 Collection of peaches
 Collection of peaches
 Twelve peaches of any variety
 Twelve specimens of quinces
 Twelve specimens of quinces
 Twelve specimens of quinces
 Twelve specimens of quinces
 Twelve specimens of quinces
 Twelve specimens of quinces
 Twelve specimens of quinces
 Collection of pomegranates
 Collection of grapes
 Collection of grapes
 Collection of grapes
 Collection of grapes
 Collection of figs
 Collection of figs
 Collection of figs
 Collection of figs
 Best six specimens of figs
 Largest and best exhibit of fruit raised in the district

Mrs. E. A. Hill Comanche.
 L. U. Shippee Stockton.
 Joseph Putnam Clements.
 L. U. Shippee Stockton.
 Joseph Putnam Clements.
 Joseph Putnam Clements.
 Hugh Quinn Chinese Camp.
 Hugh Quinn Chinese Camp.
 W. B. O'Malley Atlanta.
 V. A. Lyons Stockton.
 L. U. Shippee Stockton.
 S. Y. Strait Stockton.
 Joseph Putnam Clements.
 Mrs. M. P. Henderson Stockton.
 Mrs. C. C. Castle Stockton.
 Mrs. W. B. Harrison Stockton.
 Mrs. B. Keep Stockton.
 L. U. Shippee Stockton.
 S. Y. Strait Stockton.
 W. B. West Stockton.
 Geo. West Stockton.
 L. U. Shippee Stockton.
 Fred. Yost Stockton.
 Mrs. J. C. Reid Stockton.
 Don Cameron Stockton.
 Mrs. J. C. Reid Stockton.

Joseph Putnam Clements.

CLASS VI—DRIED FRUIT CURED BY THE EXHIBITOR.

Dried prunes
 Dried prunes
 Dried prunes
 Dried prunes
 Dried raisins
 Dried raisins
 Dried figs
 Dried figs
 Dried figs
 Dried figs
 Dried plums
 Dried plums
 Dried peaches
 Dried peaches
 Dried peaches
 Dried peaches
 Dried peaches
 Dried pears
 Dried pears
 Dried pears
 Dried apricots
 Dried apricots
 Dried nectarines

V. A. Lyons Stockton.
 Mrs. Joseph Hale Stockton.
 H. S. Jory Stockton.
 Mrs. E. J. Lockett Brighton.
 V. A. Lyons Stockton.
 Mrs. E. J. Lockett Brighton.
 Mrs. Jos. Hale Stockton.
 H. S. Jory Stockton.
 Mrs. J. C. Reid Stockton.
 Mrs. E. J. Lockett Brighton.
 V. A. Lyons Stockton.
 H. S. Jory Stockton.
 V. A. Lyons Stockton.
 Mrs. Joe Hale Stockton.
 H. S. Jory Stockton.
 Mrs. E. J. Lockett Brighton.
 Buhach Plantation Merced County.
 Mrs. Jos. Hale Stockton.
 H. S. Jory Stockton.
 Mrs. E. J. Lockett Brighton.
 Mr. E. J. Lockett Brighton.
 Buhach Plantation Merced County.
 H. S. Jory Stockton.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Dried nectarines.....	Buhach Plantation.....	Merced County.
Dried cherries.....	Mrs. E. J. Lockett.....	Brighton.
FRUIT IN JARS.		
Exhibit of fruit preserved in spirits.....	Mrs. J. C. Reid.....	Stockton.
Exhibit of fruit preserved in spirits.....	Mrs. Jos. Hale.....	Stockton.
Exhibit of fruit preserved in sugar.....	Mrs. J. C. Reid.....	Stockton.
Exhibit of fruit preserved in sugar.....	Mrs. Jos. Hale.....	Stockton.
Exhibit of jellies.....	Mrs. J. C. Reid.....	Stockton.
Exhibit of jellies.....	Mrs. Jos. Hale.....	Stockton.
Exhibit of jellies.....	Mrs. H. Williamson.....	Stockton.
Exhibit of jellies.....	Mrs. Isabella A. Reid.....	Stockton.
CLASS VII.—FLORAL.		
Collection of flowering plants in bloom.....	R. S. Bates.....	Stockton.
Collection of flowering plants in bloom.....	E. C. Clowes.....	Stockton.
Collection of flowering plants in bloom.....	Don Cameron.....	Stockton.
Collection of flowering ornam'tal foliage plants.....	Mrs. John Hart.....	Stockton.
Collection of flowering ornam'tal foliage plants.....	R. S. Bates.....	Stockton.
Collection of flowering ornam'tal foliage plants.....	E. C. Clowes.....	Stockton.
New and rare plants.....	R. S. Bates.....	Stockton.
New and rare plants.....	E. C. Clowes.....	Stockton.
Display of cut flowers.....	Don Cameron.....	Stockton.
Display of cut flowers.....	Mrs. R. W. Russell.....	Stockton.
Display of bouquets.....	R. S. Bates.....	Stockton.
Display of bouquets.....	E. C. Clowes.....	Stockton.
Collection of plants for greenhouse.....	R. S. Bates.....	Stockton.
Collection of plants for greenhouse.....	E. C. Clowes.....	Stockton.
Display of hanging baskets.....	Mrs. John Hart.....	Stockton.
Display of hanging baskets.....	R. S. Bates.....	Stockton.
Display of hanging baskets.....	Don Cameron.....	Stockton.
Ornamental grasses.....	Miss Mary Marshall.....	Stockton.
Ornamental grasses.....	Joseph Putnam.....	Stockton.
Ornamental grasses.....	Don Cameron.....	Stockton.
Preserved natural flowers.....	Miss Mary L. Woods.....	Stockton.
Preserved natural flowers.....	St. Mary's College.....	Stockton.
Preserved natural flowers.....	Miss Mollie Grattan.....	Stockton.
Largest display of floral pieces.....	Miss Mary Marshall.....	Stockton.
Largest display of floral pieces.....	Mrs. R. S. Bates.....	Stockton.
Single floral piece.....	Miss Mary Marshall.....	Stockton.
Single floral piece.....	Mrs. R. S. Bates.....	Stockton.
CULINARY.		
Brown bread.....	Mrs. J. C. McCall.....	Stockton.
Brown bread.....	Miss V. A. Lyons.....	Stockton.
Brown bread.....	Ida Castle.....	Stockton.
White bread.....	Mrs. J. C. McCall.....	Stockton.
White bread.....	Mrs. J. W. Bell.....	Stockton.
White bread.....	Mrs. John F. Meyers.....	Stockton.
Plate of biscuit.....	Mrs. J. C. McCall.....	Stockton.
Plate of biscuit.....	Miss Kit Kelley.....	Stockton.
Plate of biscuit.....	Miss V. A. Lyons.....	Stockton.
Plate of biscuit.....	Mrs. H. E. Williamson.....	Stockton.
Plate of biscuit.....	Miss Albertina Hickman.....	Stockton.
Plate of corn bread.....	Miss Albertina Hickman.....	Stockton.
Fruit cake.....	Mrs. E. E. Thrift.....	Stockton.
Fruit cake.....	Mrs. H. E. Williamson.....	Stockton.
Fruit cake.....	Mrs. John C. Reid.....	Stockton.
Pound cake.....	Mrs. H. E. Williamson.....	Stockton.
Sponge cake.....	Mrs. L. C. Thorn.....	Stockton.
Sponge cake.....	Mrs. J. W. Bell.....	Stockton.
Sponge cake.....	Mrs. L. Hansel.....	Stockton.
Sponge cake.....	Mrs. J. M. LaRue.....	Stockton.
Sponge cake.....	Miss V. A. Lyons.....	Stockton.
Sponge cake.....	Miss Hattie Andrews.....	Stockton.
Sponge cake.....	Miss A. Hickman.....	Stockton.
Sponge cake.....	Miss V. A. Lyons.....	Stockton.
Coffee cake.....	Lottie Bell.....	Stockton.
White bread, by miss under 16 years.....	Lillie Castle.....	Stockton.
White bread, by miss under 16 years.....		

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—AGRICULTURAL IMPLEMENTS.		
Combined harvesters	Holt Bros.	Stockton.
Houser harvesters	S. C. H. and A. Works.	Stockton.
Combined header and thrasher	Matteson & Williamson	Stockton.
Header	Matteson & Williamson	Stockton.
Ditch road and levee scraper	Clark & Ashley	Stockton.
Road scraper	Matteson & Williamson	Stockton.
Porteous road scraper	Grangers' Union	Stockton.
Four-section wood harrow	Matteson & Williamson	Stockton.
Wood-bar harrow	S. C. H. and A. Works.	Stockton.
Hollow-tooth harrow	Grangers' Union	Stockton.
Judson iron harrow	Grangers' Union	Stockton.
Road plow	Matteson & Williamson	Stockton.
Garden plow	Matteson & Williamson	Stockton.
Sulky plow	Matteson & Williamson	Stockton.
Gang plows	Matteson & Williamson	Stockton.
John Deere steel plow	Grangers' Union	Stockton.
New Deal gang plow	Grangers' Union	Stockton.
Grain trucks	Matteson & Williamson	Stockton.
Patent forks	Matteson & Williamson	Stockton.
Jackson's derrick forks	Grangers' Union	Stockton.
Nine-tooth chisel cultivator	Matteson & Williamson	Stockton.
Panet, Jr., cultivator	Grangers' Union	Stockton.
Stretchers	Matteson & Williamson	Stockton.
Wheelbarrow	Matteson & Williamson	Stockton.
Seed drill	Francis Reynor	Lathrop.
Seed sower for plow	Francis Reynor	Lathrop.
Belt seed sower	Grangers' Union	Stockton.
Geared seed sower	Grangers' Union	Stockton.
Rotary jointer	Francis Reynor	Lathrop.
Lightning hay press	S. C. H. and A. Works.	Stockton.
Fanning mill	S. C. H. and A. Works.	Stockton.
Nash & Cutts' fanning mill	Grangers' Union	Stockton.
Daniel Best's fanning mill	Grangers' Union	Stockton.
Grain cleaner, independent	S. C. H. and A. Works.	Stockton.
Grain cleaner, attachment for thrasher	S. C. H. and A. Works.	Stockton.
Cleaner for combined harvester	S. C. H. and A. Works.	Stockton.
Daniel Best's grain cleaning attachment	Grangers' Union	Stockton.
Empire mower	Grangers' Union	Stockton.
Standard mower	Grangers' Union	Stockton.
Potato digger	Grangers' Union	Stockton.
Corbin clod crusher, harrow, and leveler	Grangers' Union	Stockton.
Horse rake	Grangers' Union	Stockton.
Baldwin hay and straw cutter	Grangers' Union	Stockton.
Meys' horse fork and apparatus	Grangers' Union	Stockton.
Humboldt washing machine	Grangers' Union	Stockton.
Wine press	Grangers' Union	Stockton.
Post-hole auger	Grangers' Union	Stockton.
Farm wagon	M. P. Henderson & Son.	Stockton.
Two-seated open wagon	M. P. Henderson & Son.	Stockton.
Buckboard	M. P. Henderson & Son.	Stockton.
California stake-rack wagon bed	S. C. H. and A. Works.	Stockton.
Plow for all purposes	J. H. Condit	Stockton.
Plow for all purposes	H. C. Shaw	Stockton.
Gang plow	J. H. Condit	Stockton.
Gang plow	H. C. Shaw	Stockton.
Gang plow	Grangers' Union	Stockton.
Gang plow	J. K. Kendrick	Germantown.
Sulky plow	H. C. Shaw	Stockton.
Fanning mills	S. C. H. and A. Works.	Stockton.
Fanning mills	Daniel Best	San Leandro.
Fanning mills	Grangers' Union	Stockton.
Grain cleaning attachment for thrasher	S. C. H. and A. Works.	Stockton.
Grain cleaning, independent	S. C. H. and A. Works.	Stockton.
Grain cleaning, independent	Daniel Best	San Leandro.
Grain sower	H. C. Shaw	Stockton.
Hay press	S. C. H. and A. Works.	Stockton.
Cultivator	H. C. Shaw	Stockton.

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Cultivator	Grangers' Union	Stockton.
Mowing machine	Grangers' Union	Stockton.
Mowing machine	H. C. Shaw	Stockton.
Mowing machine	J. H. Condit	Stockton.
Combined clod crusher, harrow, pulverizer, and sower	Grangers' Union	Stockton.
CLASS II—TOOLS AND HOUSEHOLD IMPLEMENTS.		
Churn	Grangers' Union	Stockton.
Washing machine	A. P. Day	Stockton.
Washing machine	Grangers' Union	Stockton.
Washing machine and clothes wringer	E. W. Melvin	Sacramento.
Fruit drier	H. S. Jory	Stockton.
Wine press	H. C. Shaw	Stockton.
CLASS III—MACHINERY, BLACKSMITH WORK, ETC.		
Display of machinery from one shop	W. T. Garratt & Co.	San Francisco.
Steam engine, California manufacture	W. T. Garratt & Co.	San Francisco.
Portable steam engine, ten horse-power or over	W. T. Garratt & Co.	San Francisco.
Lift pump	John Jackson	Stockton.
Lift pump	Fred. Ruhl	Stockton.
Force pump	John Jackson	Stockton.
Force pump	Fred. Ruhl	Stockton.
Display of blacksmith work	Grangers' Union	Stockton.
Display of horseshoes	John Wood	Stockton.
Display of horseshoes	Boyden Morgan	Stockton.
One small rotary engine	S. Y. Strait	Stockton.
One small double-acting engine	S. Y. Strait	Stockton.
CLASS IV—VEHICLES.		
Best and largest display	M. P. Henderson & Son	Stockton.
Best and largest display	H. C. Shaw	Stockton.
Best and largest display	Wm. P. Miller	Stockton.
Family carriage	M. P. Henderson & Son	Stockton.
Family carriage	H. C. Shaw	Stockton.
Family carriage	Wm. P. Miller	Stockton.
Top buggy	M. P. Henderson & Son	Stockton.
Top buggy	H. C. Shaw	Stockton.
Top buggy	Wm. P. Miller	Stockton.
Top buggy	Grangers' Union	Stockton.
Open buggy	M. P. Henderson & Son	Stockton.
Open buggy	H. C. Shaw	Stockton.
Open buggy	Wm. P. Miller	Stockton.
Two-seated open wagon	M. P. Henderson & Son	Stockton.
Trotting wagon	H. C. Shaw	Stockton.
Farm wagon for general purposes	M. P. Henderson & Son	Stockton.
Spring market wagon	M. P. Henderson & Son	Stockton.
Spring market wagon	Wm. P. Miller	Stockton.
Track sulky	S. Rothtisberger	Stockton.
Track sulky	M. P. Henderson & Son	Stockton.
Ladies' phaeton	M. P. Henderson & Son	Stockton.
Ladies' phaeton	H. C. Shaw	Stockton.
Ladies' phaeton	Wm. P. Miller	Stockton.
Business wagon	M. P. Henderson & Son	Stockton.
Business wagon	Grangers' Union	Stockton.
Wagon or carriage brake	M. P. Henderson & Son	Stockton.
Display of carriage wheels, hubs, etc.	M. P. Henderson & Son	Stockton.
Assortment carriage materials and trimmings	M. P. Henderson & Son	Stockton.
Carriage springs	M. P. Henderson & Son	Stockton.
Single cart	Grangers' Union	Stockton.

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—PAINTING AND DRAWING.		
<i>Painting in Oil.</i>		
Portrait painting	Walter E. Steves	Stockton.
Specimen of figure painting	J. P. Spooner	Stockton.
Specimen of figure painting	Miss Jennie Andrews	Stockton.
Specimen of figure painting	Miss Hattie Keep	Stockton.
Specimen of figure painting	Walter E. Steves	Stockton.
Specimen of figure painting	Susie C. Horan	Stockton.
Specimen of figure painting	Miss May Tully	Stockton.
Specimen of figure painting	T. Oxley Miller	Stockton.
Specimen of figure painting	R. K. Reid	Stockton.
Specimen of figure painting	Miss J. E. Hahn	Stockton.
Specimen of landscape painting	Miss Maggie Andrews	Stockton.
Specimen of landscape painting	Miss Jennie Andrews	Stockton.
Specimen of landscape painting	Fannie Brown	Stockton.
Specimen of landscape painting	Susie C. Horan	Stockton.
Specimen of landscape painting	Miss A. C. Clapp	Stockton.
Specimen of landscape painting	Miss May Tully	Stockton.
Specimen of landscape painting	Mrs. Dr. Grattan	Stockton.
Specimen of landscape painting	Mrs. F. J. Lewis	Sacramento.
Specimen of landscape painting	Mrs. C. W. Yolland	Stockton.
Specimen of landscape painting	R. K. Reid	Stockton.
Specimen of landscape painting	Miss J. E. Hahn	Stockton.
Specimen of animal painting	Miss May Boggs	Stockton.
Specimen of animal painting	Mrs. C. W. Yolland	Stockton.
Specimen of animal painting	R. K. Reid	Stockton.
Display of plaque painting	Miss Maggie Andrews	Stockton.
Display of plaque painting	Miss W. Fullerton	Stockton.
Display of plaque painting	Miss Hattie Keep	Stockton.
Display of plaque painting	Miss Fannie Brown	Stockton.
Display of plaque painting	T. Oxley Miller	Stockton.
Display of plaque painting	Mrs. C. W. Yolland	Stockton.
Specimen of flower painting	Walter E. Steves	Stockton.
Specimen of flower painting	Miss A. C. Clapp	Stockton.
Specimen of flower painting	T. Oxley Miller	Stockton.
Specimen of flower painting	Mrs. C. W. Yolland	Stockton.
Specimen of flower painting	Miss Julia Hahn	Stockton.
Specimen of fruit painting	Miss Jennie Andrews	Stockton.
Specimen of fruit painting	Miss Hattie Keep	Stockton.
Specimen of fruit painting	Walter E. Steves	Stockton.
Specimen of fruit painting	T. Oxley Miller	Stockton.
Specimen of fruit painting	Mrs. C. W. Yolland	Stockton.
Display, the work of misses under 16 years old.	Miss May Boggs	Stockton.
General exhibit of paintings in oil.	Mrs. F. J. Lewis	Sacramento.
General exhibit of paintings in oil.	Mrs. C. W. Yolland	Stockton.
<i>Paintings in Water Colors.</i>		
Specimen in landscape.	Miss Nellie Littlehale	Stockton.
Display of flower painting	Miss Nellie Littlehale	Stockton.
Specimen painting	T. Oxley Miller	Stockton.
<i>Exhibitions.</i>		
Ivorytypes	Miss Maggie Andrews	Stockton.
Photographs	J. Pitcher Spooner	Stockton.
Photographs	M. Monico	Stockton.
Photographs	J. R. Hodson	Sacramento.
Penmanship	St. Mary's College	Stockton.
Penmanship	J. C. Bainbridge	Sacramento.
Penmanship	F. E. Cook	Stockton.
Crayon drawing	J. Pitcher Spooner	Stockton.
Crayon drawing	Miss Sadie Adams	Stockton.
Crayon drawing	Miss Nellie Littlehale	Stockton.
Crayon drawing	Walter E. Steves	Stockton.
Crayon drawing	M. Monico	Stockton.
Crayon drawing	Miss Tower	Stockton.
Crayon drawing	Miss W. Fullerton	Stockton.
Crayon drawing	Miss Anna Milco	Stockton.

TRANSACTIONS OF THE
FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Pen drawing.....	E. B. Stowe.....	Stockton.
Pen drawing.....	St. Mary's College.....	Stockton.
Pen drawing.....	Miss Nellie Littlehale.....	Stockton.
CLASS II—ORNAMENTAL PAINTING.		
Luster painting.....	Mrs. W. C. Miller.....	Stockton.
Luster painting.....	Miss Althea Hickman.....	Stockton.
Luster painting.....	Miss Fannie Brown.....	Stockton.
Luster painting.....	Miss A. C. Clapp.....	Stockton.
Kensington.....	Miss Althea Hickman.....	Stockton.
Kensington.....	Miss Fannie Brown.....	Stockton.
Kensington.....	Miss A. C. Clapp.....	Stockton.
Painting on china.....	Miss Sarah Dorr.....	Stockton.
Painting on china.....	Miss Mollie Grattan.....	Stockton.
Painting on china.....	Miss Maggie Andrews.....	Stockton.
Painting on china.....	Miss May Tully.....	Stockton.
Painting on china.....	Miss Tower.....	Stockton.
Painting on silk.....	Miss Althea Hickman.....	Stockton.
Painting on wood.....	Miss Jennie Andrews.....	Stockton.
Painting on bolting cloth.....	Miss Jennie Andrews.....	Stockton.
Painting on bolting cloth.....	Miss Mollie Grattan.....	Stockton.
Painting on bolting cloth.....	Miss Nellie Littlehale.....	Stockton.
Painting on bolting cloth.....	Miss Althea Hickman.....	Stockton.
Painting on mirror.....	Miss Jennie Andrews.....	Stockton.
Painting on mirror.....	Mrs. M. Netz.....	Stockton.
Painting on mirror.....	Miss W. Fullerton.....	Stockton.
Painting on mirror.....	Miss J. E. Hahn.....	Stockton.
Painting on mirror.....	Miss Fannie Brown.....	Stockton.
Painting on mirror.....	T. Oxley Miller.....	Stockton.
Painting on mirror.....	Mrs. C. W. Yolland.....	Stockton.
Panel painting.....	Miss Jennie Andrews.....	Stockton.
Panel painting.....	Miss Hattie Keep.....	Stockton.
Panel painting.....	Miss Fannie Brown.....	Stockton.
CLASS III—SPECIALS AND SWEEPSTAKES.		
<i>Silk Culture.</i>		
Display of silk cocoons.....	Mrs. J. C. Reid.....	Stockton.
Display of silk cocoons.....	Mrs. J. D. Utt.....	Stockton.
Reeled silk.....	Mrs. J. C. Reid.....	Stockton.
Reeled silk.....	Mrs. J. D. Utt.....	Stockton.
Calico dress for lady over fourteen years old.....	Miss Hattie Andrews.....	Stockton.
Calico dress for lady under fourteen years old.....	Miss Dorr.....	Stockton.
CLASS IV—NEEDLEWORK, ETC.		
Embroidery, raised.....	Miss DeGomez.....	Stockton.
Embroidery, raised.....	Mrs. R. W. Miller.....	Stockton.
Embroidery, raised.....	Miss Sue C. Bailey.....	Stockton.
Embroidery, raised.....	Miss Albertina Hickman.....	Stockton.
Embroidery, raised.....	Mrs. J. R. Williams.....	Stockton.
Embroidery, silk on flannel.....	Miss W. Fullerton.....	Stockton.
Embroidery, cotton.....	Miss DeGomez.....	Stockton.
Embroidery, cotton.....	Miss E. Parker.....	Stockton.
Embroidery, cross stitch.....	Miss W. Fullerton.....	Stockton.
Embroidery, cross stitch.....	Miss Delia Miller.....	Stockton.
Embroidery, cross stitch.....	Miss Ida Behrenfuss.....	Stockton.
Embroidery, etching.....	Miss W. Fullerton.....	Stockton.
Embroidery, etching.....	Miss Ida Behrenfuss.....	Stockton.
Embroidery, kensington, in crewel or wool.....	Mrs. Sarah Dorr.....	Stockton.
Embroidery, kensington, in crewel or wool.....	Miss W. Fullerton.....	Stockton.
Embroidery, kensington, in crewel or wool.....	Mrs. R. W. Miller.....	Stockton.
Embroidery, kensington, in crewel or wool.....	Miss Delia Miller.....	Stockton.
Embroidery, kensington, in crewel or wool.....	Miss Althea Hickman.....	Stockton.
Embroidery, kensington, in silk.....	Miss DeGomez.....	Stockton.
Embroidery, kensington, in silk.....	Mrs. R. W. Miller.....	Stockton.
Embroidery, kensington, in silk.....	Mrs. W. C. Miller.....	Stockton.
Embroidery, kensington, in arasene.....	Miss DeGomez.....	Stockton.
Embroidery, kensington, in arasene.....	Miss Caddie Autman.....	Stockton.
Embroidery, kensington, in arasene.....	Miss W. Fullerton.....	Stockton.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Embroidery, kensington, in arasene.	Mrs. W. C. Miller	Stockton.
Embroidery, kensington, in arasene.	Miss Albertina Hickman	Stockton.
Embroidery, kensington, in arasene.	Miss Kate White	Stockton.
Embroidery, arasene.	Mrs. J. R. Williams	Stockton.
Embroidery, arasene.	Miss May Tully	Stockton.
Embroidery, arasene.	Mrs. W. B. Starbird	Stockton.
Embroidery, chenille.	Mrs. Sarah Dorr	Stockton.
Embroidery, chenille.	Mrs. DeGomez.	Stockton.
Embroidery, chenille.	Mrs. W. C. Miller	Stockton.
Embroidery, chenille.	Mrs. J. R. Williams	Stockton.
Embroidery, chenille.	Miss A. C. Clapp	Stockton.
Embroidery, ribbon.	Miss Albertina Hickman	Stockton.
Embroidery, ribbon.	Mrs. J. R. Williams	Stockton.
Embroidery, couching	Mrs. Sarah Dorr	Stockton.
Embroidery, tinsel.	Miss Albertina Hickman	Stockton.
Crochet bedspread	Miss Albertina Hickman	Stockton.
Crochet lace	Miss W. Fullerton	Stockton.
Crochet lace	Miss Maggie Andrews	Stockton.
Crochet lace	Miss Delia Miller	Stockton.
Crochet cotton.	Miss DeGomez.	Stockton.
Crochet cotton.	Mrs. R. W. Miller	Stockton.
Crochet wool	Mrs. Sarah Dorr	Stockton.
Crochet wool	Miss Maggie Andrews	Stockton.
Baby afghan.	Miss Maggie Andrews	Stockton.
Carriage afghan.	Mrs. Ed. Oullahan	Stockton.
Carriage afghan.	Miss Mary Marshal	Stockton.
Crazy quilt	Mrs. C. Hurd	Stockton.
Crazy quilt	Mrs. Capt. Holdsworth	Stockton.
Crazy quilt	Mrs. W. D. Smith	Stockton.
Crazy quilt	Miss Mary Boggs	Stockton.
Crazy quilt	Miss Maggie Andrews	Stockton.
Crazy quilt	Miss Althea Hickman	Stockton.
Crazy quilt	Miss W. Fullerton	Stockton.
Cotton knitting	Mrs. G. Gavonessi	Stockton.
Cotton knitting	Mrs. John Gambetta	Stockton.
Cotton knitting	Miss Sue C. Bailey	Stockton.
Cotton knitting	Miss Kate White	Stockton.
Cotton knitting	Mrs. John Milco	Stockton.
Cotton knitting	Mrs. R. Van Danne	Stockton.
Worsted knitting	Mrs. Sarah Dorr	Stockton.
Worsted knitting	Mrs. G. Gavonessi	Stockton.
Worsted knitting	Mrs. John Milco	Stockton.
Worsted knitting	Mrs. R. Van Danne	Stockton.
Display of hand-knit underwear.	Miss E. Parker	Stockton.
Display of hand-knit underwear.	Mrs. Dr. Grattan	Stockton.
Display of hand-knit underwear.	Miss Albertina Hickman	Stockton.
Display of hand-knit underwear.	Miss R. Van Danne	Stockton.
Display of hand-knit underwear.	Miss V. A. Lyons	Stockton.
Display of hand-knit underwear.	Miss Althea Hickman	Stockton.
Darned net	Mrs. Isabella A. Reid	Stockton.
Darned net	Miss W. Fullerton	Stockton.
Darned net	Mrs. R. W. Miller	Stockton.
Darned net	Mrs. W. C. Miller	Stockton.
Darned net	Miss Booker	Stockton.
Hand-made lace	Mrs. Ed. Oullahan	Stockton.
Hand-made lace	Mrs. John Gambetta	Stockton.
Hand-made lace	Miss W. Fullerton	Stockton.
Hand-made lace	Miss Albertina Hickman	Stockton.
Hand-made lace	Miss Mamie Roberts	Stockton.
Hand-made lace	Miss M. H. Ober	Stockton.
Hand-made lace	Miss Booker	Stockton.
Italian lace.	Mrs. Ed. Oullahan	Stockton.
Netting lace.	Mrs. W. C. Miller	Stockton.
Spanish drawn work.	Miss F. Hernandez	Stockton.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Spanish drawn work	Miss Mollie Grattan	Stockton.
Spanish drawn work	Mrs. S. Bassilio	Stockton.
CLASS VI—DISPLAYS.		
Display of drygoods	Mrs. W. J. Belding	Stockton.
Display of ladies and children's underwear	Mrs. M. H. Ober	San Francisco.
Display of hats and caps	Lothrop & Noble	Stockton.
Display of groceries	Southworth & Grattan	Stockton.
Display of glass and decorative household goods	Mrs. Dr. Grattan	Stockton.
Display of stoves and hardware	Jas. T. Mills	Stockton.
Display of stoves and hardware	Jackson & Earle	Stockton.
Display of paper hangings and decorations	A. L. Wolf	Stockton.
Display of druggists' sundries	H. H. Moore & Sons	Stockton.
Display of druggists' sundries	R. C. Leffler	Stockton.
Display of druggists' sundries	J. D. Holden	Stockton.
Display of harness and saddlery	H. T. Dorrance	Stockton.
Display of paper manufactured in California	California Paper Co.	Stockton.
Display of furniture and carpets	Andrew Easton	Stockton.
Display of furniture and carpets	W. A. Clark	Stockton.
Display of furniture and carpets	T. S. Clark & Son	Stockton.
Display of millinery	Mrs. M. Andrews	Stockton.
Bonnet	Mrs. M. Andrews	Stockton.
Ladies' hat	Mrs. M. Andrews	Stockton.
Display of feathers	Mrs. M. Andrews	Stockton.
Display of untrimmed hats	Mrs. M. Andrews	Stockton.
Display of ribbons	Mrs. M. Andrews	Stockton.
Display of children's millinery	Mrs. M. Andrews	Stockton.
CLASS VII—MISCELLANEOUS.		
Drawn rug	Mrs. J. M. McCall	Stockton.
Drawn rug	Miss E. Callehan	Stockton.
Drawn rug	Mrs. W. D. Smith	Stockton.
Drawn rug	Mrs. A. E. Hill	Stockton.
Braided rug	Mrs. J. M. McCall	Stockton.
Turkish rug	Mrs. J. M. McCall	Stockton.
Patchwork quilt	Mrs. W. D. Smith	Stockton.
Patchwork quilt	Mrs. Dr. Grattan	Stockton.
Patchwork quilt	Miss W. Fullerton	Stockton.
Patchwork quilt	Mrs. W. B. Starbird	Stockton.
Patchwork quilt	Miss Althea Hickman	Stockton.
Worsted skirt	Miss Althea Hickman	Stockton.
Worsted skirt	Mrs. John Milco	Stockton.
Portiere	Mrs. W. B. Starbird	Stockton.
Paper flower	Miss Anna Fife	Stockton.
Paper flower	Mrs. John Gambetta	Stockton.
Paper flower	Miss E. Williams	Stockton.
Paper flower	Miss Fannie Brown	Stockton.
Trace and whiffletree guard	L. A. Lasher	Stockton.
Cook stove heat fender	A. P. Day	Stockton.
Grape crusher	S. Rothlisberger	Stockton.
Cleaner for combined header and thrasher	Daniel Best	Stockton.
Cleaner for combined header and thrasher	S. C. H. and A. Works	Stockton.
Pleasure cart	M. P. Henderson & Son	Stockton.
Buckboard	M. P. Henderson & Son	Stockton.
Triumphant reaper	H. C. Shaw	Stockton.
Excelsior sower	H. C. Shaw	Stockton.
Chilled plow	H. C. Shaw	Stockton.
Slipshear gang plow	H. C. Shaw	Stockton.
Road plow	H. C. Shaw	Stockton.
Single plow	H. C. Shaw	Stockton.
Single plow, iron beam	H. C. Shaw	Stockton.
Tule plow	H. C. Shaw	Stockton.
John Deere single plow, No. 40	Grangers' Union	Stockton.
John Deere single plow, No. 58	Grangers' Union	Stockton.
John Deere single plow, G. P. 3	Grangers' Union	Stockton.
Display of hardware and electrical supplies	Austin Brothers	Stockton.
Stove drum	J. K. Kendrick	Germantown.
Irrigating pump	John Jackson	Stockton.
Irrigating pump	Fred. Ruhl	Stockton.
College City steam and horse-power pump	Root, Neilson & Co.	Sacramento.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Richards' patent centrifugal pump	W. T. Garratt & Co.	San Francisco.
Plungers and valves for deep and shallow wells	John Jackson	Stockton.
Gasoline stoves	John Jackson	Stockton.
Monarch No. 56, gas stove	John F. Meyers & Co.	San Francisco.
Monarch gasoline stove, No. 107	John F. Meyers & Co.	San Francisco.
Monarch gas heating stove	John F. Meyers & Co.	San Francisco.
Pulverizer	D. Lubin	Sacramento.
Golden Gate separator	J. C. Bowden	Stockton.
Picket fence	J. C. Bowden	Stockton.
Machine for making fence	Charles Green	Stockton.
Machine-made fence	Charles Green	Stockton.
Fire escape	Charles Green	Stockton.
Exhibit of mill work	P. A. Buell & Co.	Stockton.
Wooden mantel	P. A. Buell & Co.	Stockton.
Churn dasher	Baxter & Goodfriend	Stockton.
Sycicle	C. A. Ashley	Stockton.
Display of marble	Dickson & Woodhull	Stockton.
Parlor folding bed	W. A. Clark	San Francisco.
Folding sofa bed	W. A. Clark	San Francisco.
Folding bed	Truman S. Clark & Son	San Francisco.
Folding cot	Truman S. Clark & Son	San Francisco.
Iron bedstead	Truman S. Clark & Son	San Francisco.
Iron furniture	W. A. Clark	San Francisco.
Exhibit of printing press and type	Everet Ruggles	San Francisco.
Mattresses	W. A. Clark	San Francisco.
An infant's chair	W. A. Clark	San Francisco.
Dressing-case, washstand, and bureau combin'd	Truman S. Clark & Son	San Francisco.
Center-table and toilet washstand combined	Truman S. Clark & Son	San Francisco.
California made chair	Truman S. Clark & Son	San Francisco.
Folding camp stool	Truman S. Clark & Son	San Francisco.
Kitchen cabinet	S. M. Bowden	Stockton.
Refrigerator	S. M. Bowden	Stockton.
Exhibit of brass work, etc.	W. F. Garratt & Co.	San Francisco.
Royal baking powder	John M. Conner	Stockton.
Knit purse	Mrs. G. Garvonessi	Stockton.
Hand-embroidered handkerchief	Mrs. John Gambetta	Stockton.
Wax piece	Miss Sue C. Bailey	Stockton.
Charcoal drawings	Miss Nellie Littlehale	Stockton.
Charcoal drawings	Walter E. Steves	Stockton.
Architectural drawings	St. Mary's College	Stockton.
Architectural designing	Miss Nellie Littlehale	Stockton.
Black crayon drawing	J. Pitcher Spooner	Stockton.
Map drawing	Baldo Milco	Stockton.
Map drawing	St. Mary's College	Stockton.
Mechanical drawing	St. Mary's College	Stockton.
Shadow painting	Miss Fannie Brown	Stockton.
Painting on tambourine	Miss Fannie Brown	Stockton.
General display of artists' materials and picture frames	A. L. Wolf	Stockton.
Flowers made from silk cocoons	Mrs. J. D. Utt	Stockton.
Hair work	Mrs. M. Netz	Stockton.
Collection of crayon pieces	M. Monico	Stockton.
Photographic groups	J. Pitcher Spooner	Stockton.
Pastel	M. Monico	Stockton.
Pastel	J. Pitcher Spooner	Stockton.
Kindergarten work	Mrs. C. U. Dohrmann	Stockton.
Cereal harvester	J. H. Huffman	Lodi.
Fancy night dress case	Mrs. W. B. Starbird	Stockton.
Table cover, embroidered	Mrs. W. B. Starbird	Stockton.
Velvet chair scarf	Mrs. W. B. Starbird	Stockton.
Piano	F. W. Spencer & Co.	San Francisco.
Piano	A. Alberti	Stockton.
Insect powder	Mrs. E. A. Hill	Stockton.
Buhach insect powder	Buhach Plantation	Merced County.
White sewing machine	White Sewing Machine Company	San Francisco.
Domestic sewing machine	J. E. Woods	Stockton.
Capillaris	Mrs. H. Works	Oakland.
Canyontell	Donn-Ellan & Co.	San Francisco.
Blue gum bitters	Blue Gum Bitters Co.	Stockton.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Triple extract.....	Mrs. H. Works.....	Oakland.
Macaroni.....	P. Mastro.....	Stockton.
Display of flour.....	Sperry & Co.....	Stockton.
Display of flour.....	Stockton Milling Co.....	Stockton.
Display of soap.....	Williams & Moore.....	Stockton.
H. H. H.....	H. H. Moore & Sons.....	Stockton.
Display of beer.....	U. S. Brewery.....	San Francisco.
General display stereotype plates.....	Examiner.....	San Francisco.
Display of electric belts and trusses.....	Pacific Electric Co.....	San Francisco.
Philosophical apparatus.....	St. Mary College.....	Stockton.
Display of school furniture.....	Hull & Stewart.....	Stockton.
Display of school apparatus.....	Hull & Stewart.....	Stockton.
Display of stationery.....	Herbert Baldwin.....	Stockton.
Display of leather and skins.....	Kullman, Wagner & Co.....	Stockton.
Angora robe skins.....	Williams & Moore.....	Stockton.
Display of Japanese goods.....	Quan Yak.....	Stockton.
Collection of French walnuts.....	W. B. West.....	Stockton.
Banana trees.....	Mrs. I. D. Hamilton.....	Stockton.
Tobacco, first and second crop.....	Arthur Thornton.....	New Hope.
Dried strawberries.....	Mrs. E. J. Lockett.....	Brighton.
Dried blackberries.....	Mrs. E. J. Lockett.....	Brighton.
General display of fruit from one ranch.....	Buhach Plantation.....	Merced County.
Ruling, numbering, and perforating machines, samples of book-binding, and display of fancy cards.....	Mail Publishing Co.....	Stockton.
Display of fine ornamental and fancy cake.....	John Gross.....	Stockton.
Display of candy manufactured at pavilion.....	John Gross.....	Stockton.
Cabin 20x30 feet square built of watermelons.....	Ladies' Com. of Lodi.....	Lodi.
Display of eggs twelve months old.....	A. J. J. Ralph.....	Stockton.
Curiosity shop.....	Mrs. J. W. Hart, Manageress.....	Stockton.
Display of mountain quail.....	H. Rhoades.....	Stockton.
Crayon drawing.....	Annie Milco.....	Stockton.
County exhibits.....	San Joaquin County.....	Stockton.
Case of stuffed birds.....	Miss J. E. Hahn.....	Stockton.
FLORAL SPECIAL.		
Single floral piece.....	Mrs. H. E. Williamson.....	Stockton.
Single floral piece.....	Mrs. R. S. Bates.....	Stockton.
Display of floral pieces.....	Mrs. R. S. Bates.....	Stockton.
Display of floral pieces.....	Miss Mary Marshall.....	Stockton.
Display of floral pieces.....	Ladies' Committee.....	Stockton.

CURIOSITY SHOP.

The following relics were entered by those whose names are prefixed:

Mrs. C. O. Ivory—Collection of birds.

Mrs. Judge Creanor—Bedstead used in 1780.

Mrs. Jessie Lewis—Spinning wheel, 1849.

M. Rhodes—Fox's Book of Martyrs, vols. 1 and 2, 1794.

Mrs. Mary Rhodes—Photographs of my father and mother, Dr. E. Kimball and Elizabeth Culling Kimball, copied from portraits painted in 1826; old oil painting, by school girl, 1820; sampler, worked by girl of ten years, 1808; paddle; war club; cocoanut; bamboo pitcher; largeshell from Tahiti; original letter from Gen. R. E. Lee, March, 1866.

Mrs. H. M. Fanning—Plaque of old jew-

elry; old brocade silk dress; mantilla; two silk aprons; tatting collar and undersleeves; two linen collars and one nightcap; two specimens of sewing from Philadelphia, 1876; one wood receiver from Rome; match safe made in Jerusalem from olivewood; glass slipper from Philadelphia; straw fan from Vienna; embroidered birch box from England; tortoise shell card receiver; china-ware from Ireland—sugar bowl, two small pitchers, two plates, cup, salt dish—all more than 100 years old; bread dish 150 years old; platter; vegetable dish; old family Bible; China coin sword; souvenir from New Orleans; two stuffed ducks; Liberty Bell souvenir; sword made of Chinese coins.

CURIOSITY SHOP—Continued.

Mrs. C. R. Ralph—Picture painted by an inmate of the Insane Asylum, Stockton, California; jar brought across the plains in 1852.

Mrs. F. S. Knight—Jar over 100 years old.

Mrs. H. S. Sargent—Old fashioned clock over 100 years old; two fine buckets; fancy powder horn made in 1787; Mexican bean; wall pocket from Sandwich Islands; piece of cane cactus; breastpin; portrait of Mrs. Sargent's mother.

Mrs. J. W. Hart—Psalm and hymn book printed in 1804; book of Religious Life, 137 years old; book of Common Prayer, printed in 1823; shawl 100 years old; cream pitcher 100 years old; work box 75 years old; five specimens of manzanita; Indian mortar; cornet brought across the plains in 1849.

Mrs. Towers—Army blanket and piece of fringe from a flag, picked up at the battle of the Wilderness; picture of Mr. Tower.

Miss Tower—Portrait work in crayon; hand-painted china plaque.

Mrs. Holt—Tule horseshoe; spinning wheel from Germany; Gladstone and Churchill, carved from wood; very old pitcher; petrified shell; petrified star fish; pictures from Germany made in 1822; hymn book from Germany, 1802; handkerchief made at the Centennial; gravy spoon, 44 years old; teaspoon and tablespoon; Mexican pot.

F. W. Eaves—Curiosities from the Chicago fire.

J. S. Lewis—Net made by Mrs. Lewis.

Captain Fake—Dress goods from Fiji Islands made from bark of coconut tree; spider shells from Fiji Islands; Japanese dress goods; horned oyster shell from Gulf of California; emu egg from Australia; Fiji war club; soapstone idols from Foo Chow, China; Peruvian teapot; seed from Peruvian fruit; soapstone plate from China; flying fish wings from Pacific Ocean; pure salt from salt mine in Peru; Chinese slippers; part of stone from desert of Peru; agate egg from Peru; specimens from a mine in Peru.

Miss de Bell—Paper weight from Venice; napkin ring of olive wood from Jerusalem.

Mrs. H. Reier—Silver punch spoon.

L. Hansel—Specimen from Murphy's Cave.

Mrs. Jake Paris—Quilt, 15,526 pieces.

Mrs. Wilkes—Three spoons 110 years old; white spread.

Mrs. Dr. Todd—Silk blanket, woven in Rome; Panama slippers, 1849; silk dress, embroidered in her 69th year; straw slippers from Florence, Italy; grandma's bag; figured moire antique dress; white satin vest; old fashioned ribbon; straw fan from Florence, Italy; three old fans; gold-plated salt cellar 90 years old, and lava bracelet; Italian pottery bottle from Florence, Italy; Roman snail; Roman pitcher; a foreign pitcher; candle holder; silver tray.

Antone Stoetzar—Relic from Italy, art industry.

Mrs. C. Ralph—Specimens of coins and greenbacks.

Mrs. J. Snow—Old brass candlestick.

Mrs. A. D. Ralph—Specimen of manzanita.

Mrs. J. H. Andrews—Old fashioned Sunday quilt, 1830; pair of shoes, 1831; bolting cloth used at Sperry's Mill; English dude;

pocket made at Niagara 35 years ago; German silver sugar tongs 67 years old.

Mrs. Thresher—Old fashioned mantilla.

Mrs. Frank Lievers—Baby wardrobe—one worn by a Stockton business man.

Mrs. J. Willey—Ancient hatchet.

Mrs. J. S. Dunham—Hand-painted fan 75 years old.

Mrs. John Hoerr—Workbox 70 years old.

Mrs. W. R. Louttit—Quartz specimen from Nevada mine.

Mrs. B. S. Clowes—Hand-made lace veil 57 years old; pair linen pants, old style; bedspread of linen and wool yarn spun and woven by hand; pillow case and three towels made by hand; large and small pitcher; teacup and saucer; coffee cup and saucer; two silver spoons; San Francisco newspapers, the "Herald" of 1852; scrap of parchment deed and box of old fashioned wafers; drinking horn 100 years old; book of Common Prayer, printed in 1793; pair of home-spun linen stockings; ball of home-spun thread.

Mrs. E. M. Stowe—Black strap glass, 1815; one pair of linen pillow cases, 1818; first pair of pants worn by a prominent business man of Stockton; diamond home made linen towel; pair of bridal sleeves, 1822; pair of silk hose, 75 years old; skein of home made linen thread; book 122 years old; pair ice heels, snuffers, and tray; pair of small pillows; specimen of old fashioned dipped candles.

J. S. Beecher—Old bedspread, 80 years old; linen sheet, 80 years old; pair home made linen pillow cases, 80 years old; bed valance.

E. B. Stowe—Pair of old candlesticks.

W. Howell—Sword scarf, worn in war; bunch of raw silk, washed ashore from the Golden Gate; suit worn by W. O. Johnson at the time he was killed, aged 62 years.

Mrs. W. H. Cole—Quilt made by Mrs. Cole; tidy—American eagle; spread 34 years old; quilt 36 years old.

J. A. Crow—One powder horn and shot board; brass candlestick.

Mrs. J. Giovanessi—Apron 25 years old; silk shawl from Switzerland; bedspread; pin from Italy, seven heads, representing each day of the week; old fashioned jewelry over 80 years old.

H. O. Mathews—Holy Bible, 1774; wedding ring, 1794; invalid plate 50 years old; cup and saucer 50 years old; three samplers, one marked 1820, 45 years old; old fashioned picture of Washington.

M. Kaller—Apron 60 years old; slippers 50 years old; spoon and fork, old Revolutionary times; old fashioned teapot; Scotch china cake plates 80 years old; old book, 180; knitted collar and two pieces of lace; bed quilt, pieced in 1838; crape shawl.

H. N. Rixon—Paper box from England.

Sarah Burge—Piece of cloth 130 years old; linen towels 100 years old.

Mrs. McSherry—Relic, pottery.

Mrs. Coleman—Porcelain breastpin 100 years old; linen napkins 150 years old.

Mrs. C. O. Ivor—Quilt bedspread, woven in 1843, in Ohio.

K. M. Bameroff—Fan carved by knife, in one piece of wood.

Mrs. Netz—Mortar and pestle from Calaveras County, 130 years old.

S. M. Butler—Old fashioned stays made in 1600.

E. E. Thrift—Ulster County "Gazette," 87 years old.

Mrs. W. L. Overheiser—Infant's dress, hand sewing 32 years old; bonnets and hood 34 years old; old picture; English Farmer's Friend, pin and buckle; pearl 40 years old; flowers from the Centennial; breastpin and buckles, gold, 32 years old; Japanese box 60 years old; samplers made in 1747 and 1804; album spread, made in 1847; bed rug 47 years old.

Gerlach—Steer's horn.

Roshenbush—Feather bed 80 years old.

J. A. Crow—Feather bed 80 years old.

H. Williamson—Continental Government bank note, 1776; specimen bark of the big trees in three pieces.

J. B. Webster—Quiver for arrows.

Mrs. Jos. Hale—Photograph of Mrs. Gilbert, 100 years old; two Holy Bibles, over 85 years old; shell pyramids.

J. B. Webster—Sketch 27 years old; pair of earrings 15 years old; blanket pin; whaling canoe; whaling harpoon; handles of a sailor's chest.

Mrs. B. Durand—Sea egg; picture frames made from the selection of "The Mother of the Forest," big trees, of California; Indian basket used by squaws.

Mrs. Hoerr—Pillows and shams, hand made; two linen table cloths and napkins 75 years old.

Mrs. B. Durand—Barnacle; implements for graining; star fish; abalone shells; pebbles gathered at Camelia, California.

Mrs. L. W. Sperry—Fruit dish 250 years old; coffee pitcher 100 years old; token from Alaska; vase, made from a stone picked up on the shore of the Dead Sea; old Florentine bell; silver Alaskan spoon.

Mrs. Steele—Painting by Miss Gussie Williams when 16 years old, and first effort; two quilts 200 years old; pipe of California wood; "She" (as old as creation), carved work; Chinese butter paddle and patty; petrified wood; piece of the roof of the old San Diego barracks; papoose shoes from Arizona; old pitcher found on Merced plains in 1849; portrait of Miss Susie Williams of Merced; crocheted bedspread; Japan wood; specimen ore from Fresno; fiddle brought across the plains in 1849; pictures; book presented by Daniel Webster's grandmother to Elenor Shafe, in 1789.

Mrs. C. J. Smith—History of Germany and Italy, printed in 1800; table 100 years old; three chairs 100 and 118 years old.

Mrs. C. W. Bidwell—Two saucers, two teacups, and two teaspoons, over 100 years old.

Mrs. Fanning—Pair of wool cards; piece of coal.

Mrs. Wrench—Specimen from Mammoth Cave, Kentucky.

Mrs. Silas March—Spread 75 years old.

Mrs. H. Clark—Two shirts, hand made, 27 years old; piece of sewing done 23 years ago on Wheeler & Wilson sewing machine.

Mrs. S. P. Bailey—Emu egg; bale of cotton; Centennial emblem.

W. H. Van Vlear—Elkhorn and case of guns, showing the progress of guns for 150 years.

Mrs. J. M. McCall—Shell, very rare; cup and saucer 150 years old.

Mrs. Dr. Clark—Two samplers, 1802 and 1825; staff and cones.

John Wilkes—Sugar tongs over 100 years old; cut glass salt dish.

Mrs. John Reid—Case of lava specimens.

Dr. Todd—Alaska garnets.

W. E. Steves—Two specimens of marble and brick from Rome.

Mrs. Laura de Force Gordon—Indian arrow head, taken from the dead body of a white man; History of Rome, 268 years old; Confederate money; badge; newspaper containing an account of Washington's funeral, 1800; specimen of Washington Monument; book, order of proceedings and dedication of Washington Monument; fancy workbox, inlaid and carved, made of California wood, in San Quentin; Antelope's (great Indian chief) blanket; papoose shade and Indian blanket.

Miss Alice Baum—Two vases, modeled in common clay; lamp, modeled in common clay.

Mrs. John Giovanessi—Old damask silk spread 100 years old.

Dr. Todd—Raphael Madonna; Angelica (Kaufman's); Holbein Madonna; "Die Vestatian."

Mrs. J. Prentice—Baby apron and hood.

Mrs. Merrill—Spread, 1823; bead purse 98 years old.

F. W. Sperry—Basket made by the Indians of Alaska; basket from Alaska.

A. Sperry—Indian basket from Alaska.

J. Sailes—Petrified oyster and two clams from the Coast Range.

P. Vinet—Embroidered opera cloak 30 years old.

S. Dunham—Hen's egg from Dunham's ranch; soup ladle, made from Mexican dollars, 100 years old.

J. Behaps—Ivory 70 years old; two silver tablespoons 140 years old; sketch in India ink on whale's tooth; book, 1816; pie fork, ivory; model of bay scene.

Hannah Gray—Badge (silk) old Stockton theater, 1854.

A. W. Gove—Pair of boots made him in 1842; old watch, 1849; copper cent brought to California in 1849.

Mrs. Fred. West—Old Chinese carved knife; carving by a Chinese cook.

W. H. Van Vlear—German snuff box 100 years old.

Mrs. Dr. Todd—Silk embroidered shawl.

Mrs. Van Vlear—Framed piece of bark from Calaveras Big Trees.

Miss Lizzie Cakebride—Reeled silk and cocoons.

Miss de Gomez—Model of spinning wheel 150 years old.

Mrs. Dudley—Old silver teapot over 50 years old; old fashioned tortoise shell comb.

Mr. Gerlach—Gun found out on the plains in 1827; cane made of whale's tooth, carved.

H. S. Sargent—Mason's apron 80 or 90 years old, belonged to H. S. Sargent's father; two old coins, 1701 and 1780.

CURIOSITY SHOP—Continued.

- Delia Wolf—Old silver watch 80 years old.
- Mrs. J. Belding—Point of whale's tooth; China cup and saucer and plate 200 years old.
- Miss Sophie Belding—Sixty-year old purse.
- Clara Young—Specimen big tree bark.
- J. W. Hart—Photograph from a painting 100 years old; candlestick 100 years old; four steel engravings of Queen Victoria; cream pitcher over 100 years old; picture of ladies' dress in 1790, from London, England.
- Mrs. Mary Kuhn—Suit of baby clothes 28 years old; suit of boy's clothes 25 years old; and old style of suspenders.
- Mrs. Phil. Rohrbacher—Set of pitchers (three) from Suflum, Elsar, Germany, from the largest pottery in the world.
- Minnie Fuller—A set of jewelry made of cantaloupe seeds.
- Mrs. Holman—A wood fan, all made from one piece of wood.
- Thomas E. Ketchum—A flag presented to Company "A," Third Infantry, California Volunteers, Captain Thomas E. Ketchum (mostly raised in and around Stockton), by the citizens of Eel River, Humboldt County, for services rendered in and about that part of the country during the late war. They captured or killed six hundred and fifty Indians from the month of March to August, 1862.
- Miss Sophie Belding—Pair of silk hose 75 years old.
- Mrs. Giovanessi—Head of wheat 10 years old.
- Case; two ships; marble table top, inlaid; three beaver skulls; charm string of 500 buttons; pig, just as they were 100 years ago.
- Mrs. Dr. Clark—Stick of cones.
- Mrs. Dudley—Baby dress, hand made, 50 years old.
- Mrs. Wm. P. Miller—Handkerchief, was on the neck of a young lady at the time she was murdered.
- Miss Susie Creanor—Old wooden cross from the San José Mission, 125 years old.
- Mrs. Jos. Adams—Pewter platter 200 years old, used as a syrup jar in Germany in 1416; specimens of gold and silver ore from the Thredway mine, Douglass Island, Alaska; garnet stone, thirty miles from Jeneau, Alaska; mat and two baskets from Sitka, Alaska; Indian spoon from Alaska, 200 years old; paper cutter made of sorrento wood, from Italy; fox and lynx skin, and large mat made from birch wood, from Alaska; locket 145 years old; lot of specimens from Murphy's Cave, Calaveras County.
- Mrs. B. S. Clowes—Sheet of linen, spun and woven by hand.
- Mrs. Dr. Ruggles—Case of California birds.
- Mrs. E. H. Wilkes—Genealogical tree for five generations.
- Mrs. John Reid—Hawaiian fiber cloth sheet.
- Mrs. Col. Hurd—View of the first American railroad train, and one picture.
- Miss Leonard—Case of birds' eggs, insects, etc.
- Mrs. Mary Rhodes—Indian pillow.
- Lizzie Hudson—China teapot 100 years old; six tablespoons over 100 years old; portrait of George Washington, framed from a piece of timber from the house in which he was born.
- Dr. Reid—The last relic of the Stockton Custom House, a paper weight from Andrew Lester, the last collector of the port.
- Mrs. Seivers—Fireman's belt ornamented with pebbles, 1886.
- Mrs. Dr. Todd—A Moorish inkstand from Del Hambra, Spain; lace handkerchief and towel.
- Mrs. Wilkes—Set of silver buttons.
- Dr. Reid—Regulation sword and belt of Surgeon of United States Army.
- M. A. Campbell—Bible printed in 1683.
- Mrs. Durand—Fragment of stone.
- Miss Bates—Cream and sugar bowl; saucer and cup 100 years old; sampler worked in 1844; spoon and sugar tongs over 200 years old; two fire screens 100 years old; black shawl over 100 years old; burned tacks from Chicago; pillow, all made by hand, 135 years old.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBREDS.			
Grover Cleveland	Matt Storns	San Francisco	\$25 00
Bolero	D. J. McCarty	San Francisco	\$15 00
Surento	D. J. McCarty	San Francisco	\$10 00
Duke of Stanislaus	Sam. Miller	Modesto	\$4 00
Adeline	D. J. McCarty	San Francisco	\$15 00
Narcola	Matt. Storns	San Francisco	\$5 00
Rosedale	Matt. Storns	San Francisco	\$10 00
CLASS II—ROADSTERS.			
Hawthorne	L. U. Shippee	Stockton	\$25 00
Lynwood	P. Visser	Stockton	\$10 00
Ebony	Caleb Dorsey	Oakdale	\$15 00
Reliance, Jr.	J. K. Baldwin	Belota	\$5 00
Colt	L. M. Morse	Lodi	\$10 00
Colonel	S. P. Bailey	Stockton	\$3 00
Pericles	W. R. Bailey	Stockton	\$7 50
Combination	A. C. McDowell	Pleasanton	\$2 50
Charlie	C. H. Wakefield	Stockton	\$15 00
Mag	C. Lomasney	Stockton	\$5 00
Bohemian Girl	R. E. Stowe	Stockton	\$10 00
Amy H	S. Hewlett	Stockton	\$3 00
Hawthorne Maid	L. U. Shippee	Stockton	\$7 50
Carrie Vernon	J. A. McCloud	Stockton	\$2 50
Flora	C. Lomasney	Stockton	\$5 00
Sarah Vernon	George W. French	Stockton	\$2 00
Matched, George and Lady Washington	R. C. Sargent	Stockton	\$20 00
Matched, Lady and Mollie	John F. Visser	Stockton	\$7 00
Billy Vernon	W. A. French	Stockton	\$4 00
	Putnam Visser	Stockton	\$2 00
Flora	L. U. Shippee	Stockton	\$4 00
	Putnam Visser	Stockton	\$2 00
CLASS III—HORSES FOR ALL PURPOSES.			
Comet	Smith Acker	Oakdale	\$25 00
Prince Belone	Asa Clark	Stockton	\$10 00
Doctor	F. R. Shaw	Salina, Kansas	\$10 00
Nephew, Jr.	N. Nevin	Stockton	\$9 00
Joe	J. C. Bowden	Stockton	\$3 00
Priam, Jr.	W. E. Morris	Stockton	\$3 00
Flora	N. Nevin	Stockton	\$10 00
Clara G	L. Gerlach	Stockton	\$4 00
Nellie Vernon	Alex. Gross	Stockton	\$7 50
Victoria	Wm. Thomas	Douglas Flat	\$5 00
Jennett	Samuel Hewlett	Stockton	\$2 00
CLASS IV—DRAFT HORSES.			
Fasian	C. K. Bailey	Stockton	\$25 00
Eureka	C. K. Bailey	Stockton	\$10 00
Sir Francis	F. R. Shaw	Salina, Kansas	\$15 00
Arab	E. R. Elliott	Lodi	\$5 00
Prince	James Roberts	Irvington	\$9 00
Sampson	A. McCormick	Linden	\$3 00
Roxey	A. B. Sperry	Stockton	\$3 00
Lady Smith	F. R. Shaw	Salina, Kansas	\$10 00
Jessie	U. Martin	Stockton	\$4 00
Francis	A. B. Sperry	Stockton	\$5 00
Vic	U. Martin	Stockton	\$2 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Matched, Princess and Milk Maid	A. B. Sperry	Stockton	\$15 00
Matched, Princess Beatrice and Lady Smith	F. R. Shaw	Salina, Kansas	\$5 00
CLASS V—CARRIAGE ANIMALS.			
Jim and Jack	R. W. Russell	Stockton	\$20 00
Jim and Bill	C. Hunting	Acampo	\$7 00
CLASS VI—MULES.			
Span, Mollie and Collie	L. U. Shippee	Stockton	\$15 00
Span, Dock and Sam	F. B. Haslam	Stockton	\$5 00
CLASS VII—JACKS AND JENNIES.			
Big Tom	Henry Hamilton	Stockton	\$25 00
Jim	T. R. Heath	Stockton	\$10 00
Tommy	L. U. Shippee	Stockton	\$15 00
Frank	L. U. Shippee	Stockton	\$5 00
Washington Eclipse, Jr.	Levi Carter	Ceres	\$9 00
Jack "Cap"	L. U. Shippee	Stockton	\$3 00
Lummix	L. U. Shippee	Stockton	\$15 00
Betsy	L. U. Shippee	Stockton	\$5 00
Sister	L. U. Shippee	Stockton	\$10 00
CLASS VIII—DURHAMS.			
3d Kirklivington of Forest Home	Col. C. Younger	San José	\$20 00
23d Kirklivington of Forest Home	Col. C. Younger	San José	\$9 00
29th Duke of Kirklivington	Col. C. Younger	San José	\$3 00
COWS.			
10th Rose of Forest Home	Col. C. Younger	San José	\$15 00
14th Dolly	Col. C. Younger	San José	\$5 00
23d Red Dolly	Col. C. Younger	San José	\$15 00
8th Oxford Rose	Col. C. Younger	San José	\$7 00
11th Oxford Rose	Col. C. Younger	San José	\$2 50
CLASS X—JERSEYS AND ALDERNEYS.			
Sneath, Jr. (Jersey)	W. A. French	Stockton	\$9 00
CLASS XI—AYRSHIRES, HEREFORDS, HOLSTEINS.			
Ethelbert (4313)	Geo. Bement & Son	Redwood City	\$15 00
Lord Faxon (4314)	Geo. Bement & Son	Redwood City	\$3 00
Red Mikado (4315)	Geo. Bement & Son	Redwood City	\$3 00
Elaine (7401)	Geo. Bement & Son	Redwood City	\$15 00
Marion (7408)	Geo. Bement & Son	Redwood City	\$5 00
Sylph (8633)	Geo. Bement & Son	Redwood City	\$10 00
Ethel Berta (9519)	Geo. Bement & Son	Redwood City	\$7 50
Faxonia (9521)	Geo. Bement & Son	Redwood City	\$2 00
Sedro (3168)	F. H. Burke	Menlo Park	\$20 00
Pio Pico	W. H. Mayes	Stockton	\$15 00
Kingsburg	F. H. Burke	Menlo Park	\$5 00
Von Moltke	F. H. Burke	Menlo Park	\$9 00
Omaha	F. H. Burke	Menlo Park	\$3 00
King of Menlo	F. H. Burke	Menlo Park	\$3 00
Sylpha	F. H. Burke	Menlo Park	\$15 00
Lena Wit Menlo	E. H. Burke	Menlo Park	\$5 00
Edna of Troy	F. H. Burke	Menlo Park	\$10 00
Wiscasset	F. H. Burke	Menlo Park	\$7 50
Princess Trintjo	F. H. Burke	Menlo Park	\$2 00
Duke of Hereford	Jas. Kay	Sacramento	\$9 00
Novelist 2d	Jas. Kay	Sacramento	\$3 00
Bountiful	Jas. Kay	Sacramento	\$15 00
Gaudy	Jas. Kay	Sacramento	\$5 00
Dot	Jas. Kay	Sacramento	\$10 00
Duchess	Jas. Kay	Sacramento	\$3 00
Pretty Maid	Jas. Kay	Sacramento	\$7 50
Sylvia	Jas. Kay	Sacramento	\$2 50
Broady	Jas. Kay	Sacramento	\$2 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS XII—GRADED CATTLE.			
Bessie F.....	W. A. French.....	Stockton.....	\$10 00
CLASS XIII—HERDS OF CATTLE.			
Durham Herd—Kirklivington; 10th Rose of Forest Home, 14th Dolly, 4th Red Oxford Rose, 23d Red Dolly.....	Col. C. Younger.....	San José.....	\$20 00
Ayrshire Herd—Ethelbert (4313); Elaine (7401), Sybilla (7809), Sylph (8633), Ethel Berta (9519).....	Geo. Bement & Son.....	Redwood City.....	\$20 00
Holstein Herd—Sedro (3168); Lena Wit Menlo (2840), Kallie Lincoln (5696), Thissa (9679), Sylph (6964).....	F. H. Burke.....	Menlo Park.....	\$20 00
Hereford Herd—Duke of Hereford; Bountiful, Dot, Countess, Duchess.....	Jas. Kay.....	Sacramento.....	\$20 00
CLASS XV—SHEEP.			
Cotswold ram.....	Col. C. Younger.....	San José.....	\$10 00
Southdown ram.....	Geo. Bement & Son.....	Redwood City.....	\$10 00
CLASS XVI—SWINE.			
Black Deek (Berkshire).....	L. U. Shippee.....	Stockton.....	\$10 00
Stockton Chief (Berkshire).....	A. B. Sperry.....	Stockton.....	\$4 00
Sows.....	L. U. Shippee.....	Stockton.....	\$9 00
Sow Peggy.....	C. A. Stowe.....	Stockton.....	\$3 00
Queen Best and eight pigs.....	C. A. Stowe.....	Stockton.....	\$10 00
CLASS XVII—POULTRY.			
Two pairs Plymouth Rocks.....	L. U. Shippee.....	Stockton.....	\$2 50
One coop Plymouth Rocks.....	J. C. Bowden.....	Stockton.....	\$1 25
Three pairs Brown Leghorns.....	W. A. French.....	Stockton.....	\$3 75
One coop bantams.....	J. C. Bowden.....	Stockton.....	\$2 50
One pair Toulouse.....	Frank H. Burke.....	Menlo Park.....	\$2 50
Turkeys, one pair and two trios of Bronze.....	L. U. Shippee.....	Stockton.....	\$3 00
One pair Japanese turkeys.....	W. A. French.....	Stockton.....	\$1 50

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—FARM PRODUCTS RAISED IN DISTRICT NO. II.			
Bale of hops.....	Joseph Putnam.....	Clements.....	\$5 00
English walnuts.....	S. Y. Strait.....	Stockton.....	\$2 00
Five pounds soft-shell almonds.....	Mrs. Jos. Hale.....	Stockton.....	\$2 00
CLASS II—VEGETABLES.			
Largest variety vegetables.....	Mrs. C. C. Castle.....	Stockton.....	\$10 00
Largest exhibit vegetables, fruit, etc.....	C. V. Thompson.....	Stockton.....	\$20 00
CLASS III—GRAIN AND GRASSES.			
Thirty bunches grain, not less than seven varieties.....	J. D. Huffman.....	Lodi.....	\$25 00
Most artistically arranged display of grain.....	J. D. Huffman.....	Lodi.....	\$10 00
CLASS V—HORTICULTURAL DEPARTMENT.			
Largest and best collection of apples.....	Mrs. E. A. Hill.....	Comanche.....	\$15 00
Second largest and best collection of apples.....	Joseph Putnam.....	Clements.....	\$5 00
Largest and best collection of pears.....	Joseph Putnam.....	Clements.....	\$15 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Second largest and best collection of peaches.....	L. U. Shippee.....	Stockton.....	\$5 00
Largest and best collection of peaches.....	Joseph Putnam.....	Clements.....	\$15 00
Second largest and best collection of peaches.....	Hugh Quinn.....	Chinese Camp.....	\$5 00
Best twelve specimens of quinces.....	L. U. Shippee.....	Stockton.....	\$3 00
Second best twelve specimens of quinces.....	Mrs. W. B. Harrison.....	Stockton.....	\$1 50
Best collection of grapes.....	George West.....	Stockton.....	\$10 00
Second best collection of grapes.....	W. B. West.....	Stockton.....	\$5 00
Best collection of figs.....	L. U. Shippee.....	Stockton.....	\$3 00
Second best collection of figs.....	Fred. Yost.....	Stockton.....	\$1 00
Best collection of pomegranates.....	Mrs. B. Keep.....	Stockton.....	\$3 00
Best six specimens of figs.....	Mrs. J. C. Reid.....	Stockton.....	\$1 50
Largest and best exhibit of fruit.....	Joseph Putnam.....	Clements.....	\$20 00
Best box dried prunes.....	Mrs. E. J. Lockett.....	Brighton.....	\$3 00
Second best box dried prunes.....	Mrs. Jos. Hall.....	Stockton.....	\$1 00
Best box dried raisins.....	Mrs. E. J. Lockett.....	Brighton.....	\$3 00
Second best box dried raisins.....	V. A. Lyons.....	Stockton.....	\$1 00
Best box dried figs.....	Mrs. Jos. Hale.....	Stockton.....	\$3 00
Second best box dried figs.....	J. C. Reid.....	Stockton.....	\$1 00
Best box dried plums.....	V. A. Lyons.....	Stockton.....	\$2 00
Best box dried peaches.....	Buhach Plantation.....	Merced County.....	\$2 00
Second best box dried peaches.....	Mrs. Jos. Hale.....	Stockton.....	\$2 00
Best box dried pears.....	Mrs. E. J. Lockett.....	Brighton.....	\$2 00
Best box dried apricots.....	Mrs. E. J. Lockett.....	Brighton.....	\$2 00
Best box dried nectarines.....	H. S. Jory.....	Brighton.....	\$2 00
Best box dried cherries.....	Mrs. E. J. Lockett.....	Brighton.....	\$2 00
Best exhibit of fruit preserved in spirits.....	Mrs. Jos. Hale.....	Stockton.....	\$5 00
Second best exhibit fruit preserved in spirits.....	Mrs. J. C. Reid.....	Stockton.....	\$2 50
Best exhibit of fruit preserved in sugar.....	Mrs. Jos. Hale.....	Stockton.....	\$10 00
Second best exhibit fruit preserved in sugar.....	Mrs. J. C. Reid.....	Stockton.....	\$5 00
Best exhibit of jellies.....	Mrs. J. C. Reid.....	Stockton.....	\$5 00
Second best exhibit of jellies.....	Mrs. Isabella A. Reid.....	Stockton.....	\$2 50
CLASS VII.—FLORAL.			
Largest collection of flowering plants in bloom.....	E. C. Clowes.....	Stockton.....	\$5 00
Collection ornamental foliage plants.....	E. C. Clowes.....	Stockton.....	\$2 00
Collection new and rare plants.....	E. C. Clowes.....	Stockton.....	\$2 00
Display of cut flowers.....	Mrs. R. W. Russell.....	Stockton.....	\$3 00
Display of bouquets.....	E. C. Clowes.....	Stockton.....	\$2 00
Collection of plants suitable for greenhouse.....	E. C. Clowes.....	Stockton.....	\$2 00
Display of hanging baskets.....	R. S. Bates.....	Stockton.....	\$2 00
Ornamental grasses.....	Miss M. Marshall.....	Stockton.....	\$2 00
Best and largest display of floral pieces.....	Miss M. Marshall.....	Stockton.....	\$15 00
Best single floral piece.....	Miss M. Marshall.....	Stockton.....	\$3 00
Floral display (special).....	Mrs. R. S. Bates.....	Stockton.....	\$10 00
CLASS VIII.—CULINARY.			
Best brown bread.....	Mrs. V. A. Lyons.....	Stockton.....	\$2 50
Best white bread.....	Mrs. J. F. Myers.....	Stockton.....	\$3 00
Best corn bread (home made).....	Miss A. Hickman.....	Stockton.....	\$2 50
Best plate of biscuits.....	Mrs. H. Williamson.....	Stockton.....	\$2 50
Best fruit cake.....	Mrs. H. Williamson.....	Stockton.....	\$3 00
Best pound cake.....	Mrs. H. Williamson.....	Stockton.....	\$3 00
Best sponge cake.....	Miss A. Hickman.....	Stockton.....	\$2 50
Best coffee cake.....	Mrs. V. A. Lyons.....	Stockton.....	\$2 50
Best loaf of bread by miss under 16.....	Lottie Bell.....	Stockton.....	\$10 00
<i>Special (Floral).</i>			
Best display of pieces.....	Miss M. Marshall.....	Stockton.....	\$13 00
Second best display of pieces.....	Ladies' Com. of 100.....	Stockton.....	\$5 00
Best single piece.....	Mrs. R. S. Bates.....	Stockton.....	\$7 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—AGRICULTURAL IMPLEMENTS.			
Best mowing machine.....	J. H. Condit	Stockton.....	\$5 00
Best combined clod crusher, harrow, and pulverizer	Grangers' Union..	Stockton.....	\$5 00
Best plow for all purposes	J. H. Condit	Stockton.....	\$3 00
Best gang plow	Grangers' Union..	Stockton.....	\$3 00
Best fanning mill	Grangers' Union..	Stockton.....	\$3 00
Best grain cleaning attachment for thrasher	S. C. H. & A. W. ..	Stockton.....	\$3 00
Best hay press	S. C. H. & A. W. ..	Stockton.....	\$5 00
Best cultivator	Grangers' Union..	Stockton.....	\$3 00
CLASS II—TOOLS, HOUSEHOLD IMPLEMENTS.			
Best churn	Grangers' Union..	Stockton.....	\$2 00
Best washing machine	C. W. Melvin	Sacramento.....	\$2 00
Best clothes wringer	C. W. Melvin	Sacramento.....	\$1 00
Best fruit drier	H. S. Jory	Stockton.....	\$5 00
CLASS III—MACHINERY, BLACKSMITH WORK, ETC.			
Best display of agricultural implements by any one house, California manufacture	S. C. H. & A. W. ..	Stockton.....	\$2 00
Best lift pump	Fred. Ruhl	Stockton.....	\$3 00
Best force pump	John Jackson	Stockton.....	\$3 00
Best display of blacksmith work	Grangers' Union..	Stockton.....	\$5 00
Best display of horseshoes	Boyd & Morgan	Stockton.....	\$3 00
Best display of horseshoes	John Wood	Stockton.....	
CLASS IV—VEHICLES.			
Largest display of vehicles	H. C. Shaw	Stockton.....	\$10 00
Best display of vehicles	Wm. P. Miller	Stockton.....	\$10 00
Best family carriage	Wm. P. Miller	Stockton.....	\$5 00
Best top buggy	M. P. Henderson & Son	Stockton.....	\$3 00
Best open buggy wagon	M. P. Henderson & Son	Stockton.....	\$2 00
Best two-seated open wagon	M. P. Henderson & Son	Stockton.....	\$3 00
Best trotting wagon	H. C. Shaw	Stockton.....	\$2 00
Best farm wagon for general purposes	M. P. Henderson & Son	Stockton.....	\$4 00
Best spring market wagon	M. P. Henderson & Son	Stockton.....	\$2 00
Best track sulky	M. P. Henderson & Son	Stockton.....	\$2 00
Best ladies' phaeton	M. P. Henderson & Son	Stockton.....	\$3 00
Best business wagon	M. P. Henderson & Son	Stockton.....	\$3 00
Best wagon or carriage brake	M. P. Henderson & Son	Stockton.....	\$1 00
Best carriage wheels, hubs, etc	M. P. Henderson & Son	Stockton.....	\$2 00
Best assortment carriage materials and trimmings	M. P. Henderson & Son	Stockton.....	\$2 00
Best carriage spring	M. P. Henderson & Son	Stockton.....	\$2 00

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—PAINTING AND DRAWING IN OIL.			
Best specimen portrait painting.....	W. E. Steves.....	Stockton.....	\$7 50
Best specimen figure painting.....	W. E. Steves.....	Stockton.....	\$3 00
Best specimen landscape painting.....	T. Oxley Miller.....	Stockton.....	\$7 50
Second best specimen landscape painting.....	Mrs. F. J. Lewis.....	Sacramento.....	\$2 50
Best specimen animal painting.....	Mrs. C. W. Yolland.....	Stockton.....	\$2 50
Best display plaque painting.....	Fannie Brown.....	Stockton.....	\$3 00
Second best display plaque painting.....	Mrs. C. W. Yolland.....	Stockton.....	\$1 00
Best display flower painting.....	T. Oxley Miller.....	Stockton.....	\$3 00
Second best display flower painting.....	Miss A. C. Clapp.....	Stockton.....	\$1 00
Best specimen fruit painting.....	Hattie Keep.....	Stockton.....	\$3 00
Second best specimen fruit painting.....	T. Oxley Miller.....	Stockton.....	\$1 00
Best specimen work of miss under 16 yrs.....	Miss May Boggs.....	Stockton.....	\$3 00
Display paintings and drawings (special).....	Mrs. G. S. Allard.....	.....	\$5 00
PAINTING IN WATER COLORS.			
Best specimen landscape painting.....	Miss Lillie Littlehale.....	Stockton.....	\$5 00
Best specimen flower painting.....	Miss Lillie Littlehale.....	Stockton.....	\$3 00
EXHIBITIONS.			
Best ivorytypes.....	Miss Maggie Andrews.....	Stockton.....	\$2 00
Best photograph.....	M. Monico.....	Stockton.....	\$10 00
Second best photograph.....	J. R. Hodson.....	Sacramento.....	\$4 00
Best penmanship.....	F. E. Cook.....	Stockton.....	\$3 00
Second best penmanship.....	St. Mary's College.....	Stockton.....	\$1 00
Best crayon drawing.....	Miss Sadie Adams.....	Stockton.....	\$2 50
Second best crayon drawing.....	Miss Anna Milco.....	Stockton.....	.....
Best pen drawing.....	E. B. Stowe.....	Stockton.....	\$3 00
Second best pen drawing.....	St. Mary's College.....	Stockton.....	\$1 00
CLASS II—ORNAMENTAL PAINTING.			
Best luster painting.....	Miss A. Hickman.....	Stockton.....	\$2 00
Second best luster painting.....	Miss A. C. Clapp.....	Stockton.....	\$1 00
Best kensington.....	Miss A. C. Clapp.....	Stockton.....	\$2 00
Second best kensington.....	Miss F. Brown.....	Stockton.....	\$1 00
Best painting on china.....	Miss Tower.....	Stockton.....	\$2 00
Second best painting on china.....	Miss Mollie Grat-tan.....	Stockton.....	\$1 00
Best painting on silk.....	Miss A. Hickman.....	Stockton.....	\$2 00
Best painting on bolting cloth.....	Miss N. Littlehale.....	Stockton.....	\$2 00
Second best painting on bolting cloth.....	Miss A. Hickman.....	Stockton.....	\$1 00
Best painting on mirror.....	Mrs. C. W. Yolland.....	Stockton.....	\$2 00
Second best painting on mirror.....	T. Oxley Miller.....	Stockton.....	\$1 00
Best panel painting.....	Miss Hattie Keep.....	Stockton.....	\$2 00
Second best panel painting.....	Fannie Brown.....	Stockton.....	\$1 00
CLASS III—SPECIALS AND SWEEPSTAKES—SILK CULTURE.			
Best display of silk cocoons.....	Mrs. J. D. Utt.....	Stockton.....	\$8 00
Second best display of silk cocoons.....	Mrs. J. C. Reid.....	Stockton.....	\$8 00
Best display of reeled work.....	Mrs. J. C. Reid.....	Stockton.....	\$8 00
Best calico dress for miss over 14 years.....	Miss Hattie Andrews.....	Stockton.....	\$10 00
Best calico dress for miss under 14 years.....	Miss Dorr.....	Stockton.....	\$5 00
CLASS IV—NEEDLEWORK.			
Best embroidery (raised).....	Mrs. J. R. Williams.....	Stockton.....	\$3 00
Second best embroidery (raised).....	Miss DeGomez.....	Stockton.....	\$1 00
Best embroidery, silk or flannel.....	Miss W. Fullerton.....	Stockton.....	\$3 00
Best embroidery, cotton.....	Miss DeGomez.....	Stockton.....	\$1 00
Best embroidery, tapestry or cross-stitch.....	Miss Ida Behrin-fuss.....	Stockton.....	\$1 50
Best embroidery, etching or cross-stitch.....	Miss W. Fullerton.....	Stockton.....	\$1 00
Best kensington in crewel or wool.....	Miss Delia Miller.....	Stockton.....	\$3 00
Second best kensington in crewel or wool.....	Miss W. Fullerton.....	Stockton.....	\$1 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best embroidered kensington in silk.....	Mrs. W. C. Miller..	Stockton.....	\$3 00
Second best embroidered kensington in silk.....	Miss DeGomez....	Stockton.....	\$1 00
Best embroidered arasene.....	Miss May Tully....	Stockton.....	\$3 00
Second best embroidered arasene.....	Mrs. W. C. Miller..	Stockton.....	\$1 00
Best embroidered chenille.....	Miss DeGomez....	Stockton.....	\$3 00
Second best embroidered chenille.....	Mrs. W. C. Miller..	Stockton.....	\$1 00
Best embroidery on ribbon.....	Mrs. J. R. Williams	Stockton.....	\$1 00
Best embroidery on couching.....	Mrs. Sarah Dorr....	Stockton.....	\$1 00
Best embroidery on tinsel.....	Miss A. Hickman..	Stockton.....	\$1 00
Best crochet on bedspread.....	Miss A. Hickman..	Stockton.....	\$3 00
Best crochet laces.....	Miss W. Fullerton..	Stockton.....	\$1 50
Best crochet, cotton.....	Miss DeGomez....	Stockton.....	\$1 00
Best crochet work.....	Mrs. Sarah Dorr....	Stockton.....	\$1 00
Best baby afghan.....	Miss M. Andrews..	Stockton.....	\$2 00
Best carriage afghan.....	Mrs. E. Oullahan..	Stockton.....	\$3 00
Second best carriage afghan.....	M. M. Marshall....	Stockton.....	\$1 00
Best crazy quilt.....	Mrs. Cap. Holdsworth	Stockton.....	\$5 00
Second best crazy quilt.....	Miss May Boggs....	Stockton.....	\$2 00
Best cotton knitting.....	Miss S. B. Bailey..	Stockton.....	\$1 50
Best display hand-knit underwear.....	Miss A. Hickman..	Stockton.....	\$3 00
Second best display hand-knit underwear.....	Mrs. Dr. Grattan..	Stockton.....	\$1 00
Best worsted knitting.....	Mrs. G. Giovenessi..	Stockton.....	\$1 50
Best darned net.....	Mrs. W. Fullerton..	Stockton.....	\$1 00
Best hand-made lace.....	Mrs. M. H. Ober....	San Francisco	\$2 00
Best netting.....	Mrs. W. C. Miller..	Stockton.....	\$1 00
Best Spanish drawn work.....	Mrs. L. Basilio....	Stockton.....	\$1 50
CLASS VI—DISPLAYS.			
Best general display of drygoods.....	Mrs. W. J. Belding..	Stockton.....	\$10 00
Best general display of ladies and children's underwear.....	Mrs. M. H. Ober....	San Francisco	\$3 00
Best general display of hats and caps.....	Lothrop & Noble..	Stockton.....	\$5 00
Best general display of groceries.....	Southworth & Grattan.....	Stockton.....	\$7 50
Best general display of glassware and decorative household goods.....	Mrs. Dr. Grattan..	Stockton.....	\$7 50
Best general display hardware, stoves, etc.	J. T. Miller.....	Stockton.....	\$7 50
Best general display hardware, stoves, etc.	Jackson & Earle..	Stockton.....	\$5 00
Best general display of paper hanging decorations.....	A. L. Wulff.....	Stockton.....	\$5 00
Best general display druggists' sundries.....	I. D. Holden.....	Stockton.....	\$5 00
Best general display harness and saddlery.....	H. T. Dorrance....	Stockton.....	\$5 00
Best general display of paper manufactured in California.....	Cal. Paper Co.....	Stockton.....	\$5 00
Best general display furniture and carpets.....	A. Easton.....	Stockton.....	\$10 00
Best general display of millinery.....	Mrs. M. Andrews..	Stockton.....	\$6 00
Best general display of bonnets.....	Mrs. M. Andrews..	Stockton.....	\$1 00
Best general display of ladies' hats.....	Mrs. M. Andrews..	Stockton.....	\$1 00
Best general display of feathers.....	Mrs. M. Andrews..	Stockton.....	\$1 00
Best general display of untrimmed hats.....	Mrs. M. Andrews..	Stockton.....	\$1 00
Best general display of ribbons.....	Mrs. M. Andrews..	Stockton.....	\$2 00
Best general display children's millinery.....	Mrs. M. Andrews..	Stockton.....	\$2 00
CLASS VII—MISCELLANEOUS.			
Best drawn rug.....	Mrs. J. M. McCall..	Stockton.....	\$1 50
Best braided rug.....	Mrs. J. M. McCall..	Stockton.....	\$1 00
Best Turkish rug.....	Mrs. J. M. McCall..	Stockton.....	\$1 00
Best patchwork quilt.....	Miss A. Hickman..	Stockton.....	\$3 00
Second best patchwork quilt.....	Mrs. W. D. Smith..	Stockton.....	\$1 00
Best worsted skirt.....	Mrs. John Mileo....	Stockton.....	\$3 00
Second best worsted skirt.....	Miss A. Hickman..	Stockton.....	\$1 00
Best portiere.....	Mrs. W. B. Starbird	Stockton.....	\$5 00
Best paper flowers.....	Mrs. J. Gambetta..	Stockton.....	\$1 00
COUNTY EXHIBITS.			
Pomona Grain S. J. Company.....	J. D. Huffman.....		\$150 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
MISCELLANEOUS AND SPECIALS.			
Bycycle race	C. C. Moore		\$20 00
Exhibit of paintings	Norton Bush		\$115 00
Equestrianism	Miss Anna Smith		\$15 00
Piute Indians	Johnson Sides		\$37 00
Piute Indians	Johnson Sides		\$150 00
Piute Indians	Captain Sam		\$75 00
Equestrianism	J. W. Kellep		\$20 00
Equestrianism	Mrs. Dr. Bailey		\$30 00
Equestrianism	Mrs. Dr. Bailey		\$10 00
Equestrianism	Mrs. Eda Bailey		\$25 00
Piute Indians	Capt. Sam (medal)		\$6 00
Piute Indians	J. Side (medal)		\$6 00
Indian race	F. Arnold		\$20 00
Display of barley, malt, beer, etc.	U. S. Brewery		\$45 00
SPECIAL MENTION.			
Slip-shear gang plow	H. C. Shaw		\$3 00
Road plow	H. C. Shaw		\$3 00
Tule plow	H. C. Shaw		\$2 00
Display of hardware electric supplies	Austin Bros.		\$17 50
Pulverizer	D. Lubin		\$2 00
Golden Gate separator	J. C. Bowden		\$3 00
Picket fence	J. C. Bowden		\$1 00
Machine for making fence	Charles Green		\$5 00
Exhibit of mill work	P. A. Buell & Co.		\$15 00
Churn dasher	Baxter & Goodfriend		\$2 00
Display of marble	Dixon & Woodhull		\$3 00
Folding bed	T. S. Clark & Son		\$5 00
Iron bedstead	T. S. Clark & Son		\$2 00
Iron furniture	W. A. Clark		\$2 00
Exhibit of printing press and type	Everett Ruggles		\$2 00
Dress wash case and bureau, combined	T. S. Clark & Son		\$3 00
Center table and toilet washstand	T. S. Clark & Son		\$3 00
California made chair	T. S. Clark & Son		\$2 00
Kitchen cabinet	L. M. Bowden		\$3 00
Refrigerator	L. M. Bowden		\$1 00
Royal baking pan	John M. Conner		\$1 00
Knit purse	Mrs. Giovanessi		\$1 00
Architectural drawing	St. Mary's College		\$2 00

SPEED PROGRAMME.

TUESDAY, SEPTEMBER 27, 1887.

RACE No. 1—RUNNING.

District running. Two-year olds. Sixty-five dollars stake; one hundred and fifty dollars added. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Go Slow, b. c., by Joe Daniels	H. Whiting	Stockton.
Oscar Wilde, b. c., by Don Victor	E. Flitner	Visalia.
Sallie Hampton, b. f., by Boots	G. W. Trahern	Stockton.
Susie Hooker, s. f., by Joe Hooker	R. T. McCarty	Copperopolis.
Geraldine, ch. f., by Grinstead	Maltese Villa Stables	Merced.
Mother Hubbard, ch. f., by Rutherford	Maltese Villa Stables	Merced.
Corona, c. f., by Norfolk	Owens Brothers	Fresno.
—, br. f., by Duke of Montrose	H. Whiting	Stockton.

<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Go Slow	Susie Hooker	1
2. Oscar Wilde	Oscar Wilde	2
3. Sallie Hampton	Go Slow	3
4. Susie Hooker	Sallie Hampton	4

Time—1:50.

RACE No. 2—RUNNING.

District running. Free for all. Purse, four hundred dollars. Four moneys. Mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Archer, s. h., by Thad Stevens	Caleb Dorsey	Oakdale.
Manzanita, ch. g., sire unknown	Joaquin Cabrera	Fresno.
Elwood, c. g., by Norfolk	Maltese Villa Stables	Merced.
Dave Douglas, b. g., by Leinster	G. W. Trahern	Stockton.
Jack Brady, b. c., by Wildidle	Davis Brothers	Copperopolis.
Oro, b. h., by Norfolk	Owens Brothers	Fresno.

<i>Position at Starting.</i>		<i>Position at Close.</i>	
1. Fred Archer		Dave Douglas	1
2. Manzanita		Manzanita	2
3. Elwood		Jack Brady	3
4. Dave Douglas		Fred Archer	4
5. Jack Brady		Elwood	5
6. Oro		Oro	6

Time—1:43; 1:43½; 1:45½.

RACE No. 3—TROTTING.

3:00 Class. Pacific Coast trotting. Purse, one thousand dollars. Four moneys.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Perihelion, b. g., by Perihelion	John A. Goldsmith	Oakland.
Allo, c. h., by Altoona	A. C. Davenport	Stockton.
Alpheus, b. h., by Membrino Wilkes	A. L. Hinds	Oakland.
Alfred S, c. g., by Elmo	W. H. Seal	Mayfield.

Position at Starting.	Position at Close.
1. Alfred S.	Allo 2 1 2 1
2. Allo	Alpheus 3 3 3 1 2
3. Alpheus	Perihelion 4 4 2 3 3
4. Perihelion	Alfred S 1 2 dis.

Time—2:25 $\frac{3}{4}$; 2:26 $\frac{1}{2}$; 2:26; 2:30 $\frac{1}{2}$; 2:27 $\frac{1}{4}$.

WEDNESDAY, SEPTEMBER 28, 1887.

RACE No. 5—RUNNING.

Pacific Coast horses. Purse, four hundred dollars. Mile dash. Four moneys.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Moonlight, b. f., by Thad Stevens	C. H. Eldred	Sacramento.
Carmen, by Wildidle	M. F. Tarpey	Santa Clara.
Notidle, ch. m., by Wildidle	M. F. Tarpey	Santa Clara.
Blue Bonnet, s. m., by Joe Hooker	G. W. Trahern	Stockton.
John A, ch. h., by Monday	H. Whiting	Stockton.
Serpolette, s. f., by Norfolk	Owens Brothers	Fresno.
Jim Duffy, s. h., by Joe Hooker	F. P. Lowell	Sacramento.

Position at Starting.	Position at Close.
1. Jim Duffy	Jim Duffy 1
2. Notidle	Notidle 2
3. John A	John A 3
4. Blue Bonnet	Blue Bonnet 4
5. Serpolette	Serpolette 5
6. Carmen	Carmen 6
7. Moonlight	Moonlight 7

Time—1:42 $\frac{3}{4}$.

RACE No. 6—TROTTING.

2:24 Class. Pacific Coast trotting. Purse, one thousand dollars. Best three in five. Four moneys.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Woodnut, ch. h., by Nutwood	B. C. Holley	Vallejo.
Jane L, br. m., by Hamlin	S. B. Lindsey	Portland, Or.
Condie, ch. g., by Abbotsford	O. A. Hickok	Cleveland, Ohio.
Black Diamond, blk. g., by Melto's Golddust	H. Hitchcock	San Francisco.
Longfellow, ch. g., by Hambletonian	W. H. Seal	Mayfield.

RACE No. 6—TROTTING—Continued.

Position at Starting.	Position at Close.
1. Condie	Woodnut 3 1 1 1
2. Black Diamond	Condie 1 4 4 2
3. Woodnut	Black Diamond 2 2 3 4
4. Jane L	Jane L 4 3 2 3
5. Longfellow	Longfellow 5 dis.

Time—2:20; 2:27 $\frac{1}{4}$; 2:19 $\frac{1}{4}$; 2:20.

RACE No. 7—TROTTING.

District trotting. For three-year olds. Stake, sixty-five dollars. Three in five. Four moneys.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Prince Albert, b. g., by Dexter Prince	L. M. Morse	Lodi.
J. C. Shelly, b. c., by Hawthorne	H. Whiting	Stockton.
Electric, b. c., by Elector	L. A. Richards	Grayson.
Reliable, b. c., by Reliance	C. W. Turner	Stockton.
Phil Brown, c. g., by Elector	D. L. Clinch	Stockton.
Flora M, ch. f., by Elector	G. H. Miller	Stockton.
Lilly P, b. f., by Elector	L. A. Richards	Grayson.
—, c. c., by Hawthorne	H. Whiting	Stockton.
Edna, c. f., by Nephew	James Dustin	Oakland.
Nettie C, c. f., by Elector	Hayes Nicewonger	Stockton.

Position at Starting.	Position at Close.
1. J. C. Shelly	Electric 2 3 1 2 2 1 1
2. Electric	Prince Albert 3 2 2 1 1 3 2
3. Prince Albert	J. C. Shelly 1 1 3 3 3 2 dis.

Time—2:33 $\frac{3}{4}$; 2:36; 2:35; 2:33 $\frac{1}{2}$; 2:33; 2:39; 2:37.

RACE No. 8—TROTTING.

District trotting. For two-year olds. Stake, sixty-five dollars; one hundred and fifty dollars added. Two in three. Four moneys.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Carrie Vernon, c. f., by Mt. Vernon	J. A. McCloud	Stockton.
Sleepy John, b. c., by Elector	L. A. Richards	Grayson.
Eddie, b. c., by Elector	L. A. Richards	Grayson.
Moses S, b. c., by Hawthorne	H. Whiting	Stockton.
Minnot, c. g., by Bay Rose	E. Geddings	Lemoore.
Endorser, blk. g., by Nephew	G. W. Trahern	Stockton.
Buena Vista, b. c., by Nephew	G. W. Trahern	Stockton.
—, blk. f., by Nephew	G. W. Trahern	Stockton.

Walkover for Moses S. Time—3:00 $\frac{1}{4}$.

RACE No. 9—TROTTING.

Matched race. Purse, two hundred dollars. Mile and repeat. Two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jim A, to harness	Jackson	
Stoneman, to wagon	Beadsley	

RACE No. 9—TROTTING—Continued.

<i>Position at Starting.</i>		<i>Position at Close.</i>	
1. Stoneman	Stoneman	1	1
2. Jim A.	Jim A.	2	2

Time—2:50½; 2:48¾.

THURSDAY, SEPTEMBER 29, 1887.

RACE No. 10—TROTTING.

2:35 Class. Pacific trotting. Purse, one thousand dollars. Four moneys. Three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Old Nick, c. g., by Electioneer	W. B. Bradberry	San Francisco.
Carl, ch. g., by Hidalgo	H. Hickock	San Francisco.
Palatena, sp. m., by Milton Medium	S. B. Lindsey	Portland, Or.

<i>Position at Starting.</i>		<i>Position at Close.</i>			
1. Carl	Old Nick	2	1	1	1
2. Old Nick	Carl	1	3	3	2
3. Palatena	Palatena	3	2	2	3

Time—2:25½; 2:23; 2:24½; 2:24½.

RACE No. 11—SPECIAL RUNNING.

Purse, two hundred dollars. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Plato, by Shannon	George Harrison	Stockton.
Franklin, by Joe Daniels	J. Dunker	Stockton.

<i>Position at Starting.</i>		<i>Position at Close.</i>			
1. Franklin	Plato	1			
2. Plato	Franklin	2			

Time—1:49½.

First heat declared off.

RACE No. 12—PACING.

2:28 Class. Pacific Coast pacing. Purse, five hundred dollars. Four moneys. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Ross, c. g., sire unknown	Eugene Hart	Pleasanton.
Bracelet, c. g., by Nephew	J. R. Hodson	Sacramento.
Billy Bunker, blk. g., by Henry Clay, Jr.	D. J. Sawyer	San Francisco.
Charley Brown, g. g., by Washington	G. P. Brown	Salinas.
Haverly, ch. g., by Kansas Signal	Frank Weber	Sacramento.

<i>Position at Starting.</i>		<i>Position at Close.</i>			
1. Bracelet	Billy Bunker	2	1	1	1
2. Billy Bunker	Fred Ross	3	3	2	2
3. Fred Ross	Haverly	4	2	3	3
4. Haverly	Charley Brown	5	4	4	4
5. Charley Brown	Bracelet	1	dis.		

Time—2:21; 2:23½; 2:26; 2:28¾.

FRIDAY, SEPTEMBER 30, 1887.

RACE No. 14—RUNNING NOVELTY.

Pacific Coast horses. Purse, one thousand dollars. Two miles. First one half mile, one hundred and fifty dollars; first mile, two hundred and twenty-five dollars; first one and one half miles, two hundred and seventy-five dollars; finish, three hundred and fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Moonlight, b. f., by Thad Stevens	C. H. Eldred	Sacramento.
Notidle, ch. m., by Wildidle	M. F. Tarpey	Alameda.
Patti, b. m., by Wildidle	M. F. Tarpey	Alameda.
John A. b. h., by Monday	H. Whiting	Stockton.
Jim Duffy, s. h., by Joe Hooker	F. P. Lowell	Sacramento.

Position at Starting.

1. Jim Duffy
2. John A.
3. Notidle
4. Patti
5. Moonlight

Position at Close.

Jim Duffy wins one mile, one and one half miles, and two miles.
Notidle wins one half mile money.

Time—Two miles, 3:33.

RACE No. 15—TROTTING.

Pacific Coast trotting. Free for all. Purse, one thousand two hundred dollars. Four moneys. Three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Adair, b. g., by Electioneer	E. H. Miller	Alameda.
Arab, c. g., by Arthunton	O. A. Hickok	Cleveland, Ohio.

Position at Starting.

1. Adair
2. Arab

Position at Close.

Arab

1	1	1
2	2	2

Time—2:18; 2:20; 2:19 $\frac{1}{2}$.

RACE No. 16—TROTTING.

Pacific Coast trotting. Three-year olds. Stake, sixty-five dollars; two hundred and fifty dollars added. Four moneys. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Soudan, blk. c., by Sultan	L. J. Rose	San Gabriel.
Flora M, c. f., by Elector	L. A. Richards	Grayson.
Mambrino Boy, b. g., by Carr's Mambrino	J. B. Iverson	Salinas.
Don Mavin, br. c., by Phillis	C. S. Lowell	Sacramento.
—, b. c., by Hawthorne	H. Whiting	Stockton.
J. C. Shelly, b. c., by Hawthorne	H. Whiting	Stockton.
Last Chance, r. c., by Romero	D. J. Colross	Oakland.
Shamrock, blk. c., by Buccaneer	G. Valensin	Oakland.
Sable Wilkes, by Guy Wilkes	Wm. Corbett	San Francisco.
Edna, b. f., by Nephew	G. W. Trahern	Stockton.

Walkover for Sable Wilkes. *Time*—2:43.

RACE No. 17—TROTTING.

228 Class. Pacific Coast trotting. Purse, one thousand dollars. Mile heats; three in five. Four moneys.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Gus Wilkes, b. g., by Mambrino Wilkes	A. L. Hinds	Oakland.
Luella, b. m., by Chicamauga	H. Hitchcock	San Francisco.
Ha Ha, c. h., by Nephew	G. R. Beardsley	Stockton.
Artist, blk. g., by Golddust	J. R. Hodson	Sacramento.
Maid of Oaks, ch. m., by Duke McLennan	A. McDowell	San Francisco.

*Position at Starting.**Position at Close.*

1. Gus Wilkes	Luella	3	5	1	1	1
2. Maid of Oaks	Gus Wilkes	1	1	2	2	2
3. Luella	Maid of Oaks	2	2	4	3	4
4. Artist	Artist	4	3	3	4	3
5. Ha Ha	Ha Ha	5	4	dis.		

Time—2:26; 2:25; 2:24; 2:24½; 2:27.

SATURDAY, OCTOBER 1, 1887.

RACE No. 18—RUNNING.

District running. Three-year olds. Stake, sixty-five dollars; one hundred and fifty dollars added. Four moneys. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack Brady, b. c., by Wildidle	Davis Bros.	Copperopolis.
Elwood, ch. c., by Norfolk	Maltese Villa Stables	Merced.
Modesto, blk. c., by Monday	Maltese Villa Stables	Merced.
Gold Cup, ch. f., by Enquirer	Owens Bros.	Fresno.
Little Thad, ch. c., by Thad Stevens	Joaquin Cabrera	Fresno.
Wallace, br. c., by Joe Hooker	H. Whiting	Stockton.
Rachael, b. m., by Joe Daniels	W. R. Ruggles	Stockton.
Blue Bonnet, s. f., by Joe Hooker	G. W. Trahern	Stockton.

*Position at Starting.**Position at Close.*

1. Elwood	Elwood	1	1
2. Blue Bonnet	Blue Bonnet	2	2
3. Gold Cup	Jack Brady	4	3
4. Jack Brady	Gold Cup	3	4

Time—1:45; 1:47.

RACE No. 19—TROTTING.

For Pacific Coast horses. 2:22 Class. Purse, one thousand dollars. Four moneys. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Stamboul, b. h., by Sultan	L. J. Rose	San Gabriel.
Valentine, br. g., by Terrell Clay	J. H. Kelly	San Bernardino.
Sister, c. m., by Admiral	J. A. Goldsmith	Oakland.
Lot Slocum, c. g., by Electioneer	Lee Shaner	San Francisco.
Thapsin, blk. g., by Berlin	Wilber F. Smith	Sacramento.

RACE NO. 19—TROTTING—Continued.

<i>Position at Starting.</i>		<i>Position at Close.</i>	
1. Stamboul.....	Stamboul.....	2	0 4 1 1 1
2. Valentine.....	Lot Slocum.....	1	0 1 2 2 2
3. Sister.....	Thapsin.....	3	4 2 3 3
4. Lot Slocum.....	Sister.....	4	3 3 4 5
5. Thapsin.....	Valentine.....	5	5 5 5 4

Time—2:20; 2:17½; 2:20; 2:20½; 2:22½; 2:25.

RACE NO. 20—TROTTING.

For Pacific Coast two-year olds. Stake, sixty-five dollars; two hundred and fifty dollars added. Four moneys. One mile; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Linda, blk. f., by Sidney.....	G. Valensin.....	Oakland.
Memo, blk. c., by Sidney.....	G. Valensin.....	Oakland.
Nehushta, b. f., by Stamboul.....	L. J. Rose.....	San Gabriel.
Clara Z, g. f., by Copri.....	A. J. Zane.....	Healdsburg.
Moses S, b. c., by Hawthorne.....	H. Whiting.....	Stockton.
Direct, blk. c., by Director.....	J. A. Goldsmith.....	Oakland.
Gold Leaf, s. f., by Sidney.....	D. J. Colross.....	Oakland.
Grande, by LaGrand.....	Wm. Corbett.....	San Francisco.
Minot, blk. c., by Bay Rose.....	E. Giddings.....	Lemoore.
Endorser, blk. c., by Nephew.....	G. W. Trahern.....	Stockton.
Buena Vista, b. c., by Nephew.....	G. W. Trahern.....	Stockton.
—, blk. f., by Nephew.....	G. W. Trahern.....	Stockton.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Memo.....	Memo } Walkover. Grande }
2. Grande.....	

RACE NO. 21—PACING.

Free for all. Purse, seven hundred dollars. Four moneys. Three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Arrow, b. g., by Richmond.....	Durfee & Covarrubias.....	Los Angeles.
L. C. Lee, blk. h., by Elmo, Jr.....	H. Hitchcock.....	San Francisco.
Killarney, b. h., by Black Ralph.....	Peter Fitzgerald.....	Woodland.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Arrow.....	Arrow..... 1 1 1
2. L. C. Lee.....	L. C. Lee..... 2 2 2
3. Killarney.....	Killarney..... 3 3 3

Time—2:16½; 2:14; 2:19½.

RACE NO. 22—SPECIAL RUNNING.

Purse, one hundred and fifty dollars. One mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Tom Daily.....	D. McCarty.....	San Francisco.
Bolaro.....	D. McCarty.....	San Francisco.
Kildri.....	— Strong.....	San Francisco.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Bolaro.....	Tom Daily..... 1
2. Tom Daily.....	Bolaro..... 2
3. Kildri.....	Kildri..... 3

Time—1:45.

TRANSACTIONS

OF THE

THIRD DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Butte, Tehama, and Colusa.

OFFICERS OF THE ASSOCIATION.

C. C. MASON.....	President.
JOHN R. GLEESON.....	Secretary.
JOHN R. ROBINSON.....	Treasurer.

DIRECTORS.

T. P. HENDRICKS	Chico.
FRANK FREEMAN.....	Willows.
C. C. MASON.....	Chico.
C. H. MERRILL.....	Willows.
E. T. REYNOLDS.....	Chico.
G. W. DORN	Chico.
W. A. SHIPPEE.....	Nelson.
D. M. REAVIS.....	Chico.

REPORT.

CHICO, December 31, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Third District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

JOHN R. GLEESON, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Receipts at Park	\$85 50
Receipts at Pavilion	415 00
Receipts for sweepstakes	16 00
State warrant	2,000 00
	<hr/> \$2,516 50

Expenditures.

License National Trotting Association	\$56 00
Rent of Park	200 00
Rent of Pavilion	100 00
Premiums paid at Park	600 00
Premiums paid at Pavilion	428 50
Salary of Secretary	250 00
Discount on State warrant	50 00
Hay and feed at Park	157 97
Help at Park	54 00
Help at Pavilion	79 50
Printing posters, premium lists, and tickets	133 00
Advertising	67 00
Postage and stationery	25 00
Telegraphing	5 00
Expressage	5 00
Drayage	11 50
Expense T. P. Hendricks to Sacramento	20 00
Expense William Hawkins to Sacramento	15 00
Expense J. R. Gleeson to Sacramento	10 00
Livery, Weed & Barnard	8 00
Livery, White & Snook	5 00
Music	60 00
Annual Address, E. R. Dille	62 00
Water at Park	25 00
Lumber, materials, etc.	42 13
Incidentals	27 90
Balance on hand	19 00
	<hr/> \$2,516 50

OPENING ADDRESS.

By RICHARD WHITE.

LADIES AND GENTLEMEN: A great pleasure has been accorded me in welcoming you here to-night, and formally opening the eighth annual Fair of the Third Agricultural District of California. I assure you I consider this a proud moment of my life in being permitted to pay my slight tribute to the noblest of employments—agriculture: and am thoroughly conscious of my inability to perform gracefully the high functions of my trust under the most favorable conditions, but on this occasion I only knew at the very last moment that I was expected to appear before you to-night, and can consequently expect to say only a few words in formally extending you the greetings of the Directors, and their thanks for your encouragement in the way of exhibits, and your attendance at this entertainment: for my impromptu and discordant remarks, however, I promise you, shall possess the merit of brevity.

My presence here will remind you of the inability of the President to attend and perform this portion of his duties personally. This is perhaps the saddest feature of the occasion, in that it reminds you of the serious indisposition of one of your most enterprising and respected citizens, Dr. Mason, upon whose good services has always depended so much of the success of former agricultural Fairs in this district. Were he present he would give you an interesting and statistical account of the work and condition, together with the hopes and prospects of the association. It is customary on occasions of this kind to discuss exhaustively those topics which are of vital interest to the industrial classes of the whole district, and incidentally those matters which are indirectly related to them; but I am informed that on to-morrow a gentleman is expected to deliver the annual address, so that I will only revert to these grand questions momentarily in formally opening this exhibition. The surroundings this evening are so propitious that I cannot, in justice to my own interested feelings, refrain from a few general remarks upon the subject of that noble profession which principally this Fair is intended to foster and stimulate. Agriculture from the beginning of human progress has occupied the highest place among all the avocations which engage man's attention. Humanity began its existence enjoying the fruits of the soil, and when it felt a slight independence for a comparatively short time only did it rove pastorally after its herds and flocks upon community hills: and then resumed the pursuit of its first love, the tillage of the earth, the appropriation of its arable soil, and the development of all its resources to individual wealth. Since that time no higher conception has ever entered the mind of man; and to-day, amid all the innumerable and varied industries of the world, the acquisition of one's own land, and the cultivation of one's own vine and fig tree, with the accompanying security and ease within their shade, is the goal toward which we are all striving. The statesman is anxiously looking for the time when he can shift the burden of the responsibilities

of his trust: the manufacturer awaits the season when his ears are no longer dinned by the hum of machinery; the owner of his argosies anticipates a calm during which he can forever cast a safe anchor: the general is intently listening for the command to disband his army; the doctor, the lawyer, the business man in every branch of business—all wait anxiously for the time when they can assume the independence of the farmer's life, and live with his luxury and ease upon their own acres.

Since the day when old Cincinnatus left his Roman plow afield to assume the insignia of power, and the head of the grandest empire of antiquity, to again resume the plow-handle and the sickle, when the emergency of state which required his service was past, has any man been able to claim for his sphere in life a position of more grandeur and dignity than the humble tiller of the soil.

Agricultural Fairs are intended to encourage and stimulate this noble industry. The principle on which they work is generally accepted to be the correct one, and is as old as history itself, extending back to the time when the champions of the Olympian and Isthmian games of early Greece strove with each other in furtherance of the nobility of the development of physical manhood. They are supported by the enactment of aiding statutes all through the statute books of civilization. In order to provide for their success the State Treasury is opened under the advice of the most competent counselors, and it is a generally accepted principle that only good results for the respective districts can follow unless their privileges be abused.

The State is divided into convenient districts to make the Fairs more effective in bringing them to as many of the people's doors as possible. This agricultural district consists of Tehama and Colusa in addition to our own county of Butte. The whole district is represented by exhibits displayed in this pavilion to-night, though the notice has been so short as to preclude an elaborate display from the distant portions of the district. While we regret this fact still we feel proud that the resources of the soil and climate of our immediate vicinity are so great as to make so creditable a display possible in so short a time without aid and assistance from our more remote neighbors and fellow toilers. I congratulate you upon the wonderful display you have made almost impromptu. It speaks volumes for the natural resources of our county and the enterprise of its citizens.

This Fair is unique in many particulars, depending as it does upon the agricultural and mechanical display, unaided by racing or any of the other accompaniments which are usually resorted to in order to make the annual Fairs a success. All of the lessons to be learned here are of the material and lasting kind, which every spectator can carry away with him without fear of failure in profiting materially by them, without contact with any evil influence. Gathered together within this hall are products typical of the whole range of the octave of soil and climate, from the exotic of the torrids, which luxuriates in our sunny valleys, to those products of the forest and mountain, corresponding in characteristics with the rugged tamarack which waves its plumes in the breezes which disturb the placid surface of our mountain lakes.

Concluding, I wish to call your attention to this particular crisis of our national existence, when displays of this kind can contribute so much to the enhancement of our national wealth and prosperity.

It is a time when multitudes of intelligent, wealthy, and industrious people are gazing longingly over our eastern mountains for just such a

genial climate and fruitful soil as can be found nowhere else in the world. Let the fame of this Fair go forth, either in the official reports or by the accounts of visitors in attendance, and these home-seekers will be attracted spell-bound hitherward, and though they seek the whole world over, no more favored spot can be found than Chico, embowered among its roses and watered by its crystal streams.

We hope, ladies and gentlemen, that you will profit by the lessons inculcated here, find a satisfying and refined pleasure in these associations surrounding for the brief season of this harvest festival: and on behalf of the Directors, I again extend a hearty welcome, and thank you for your attention.

ANNUAL ADDRESS.

By E. R. DILLE.

MR. CHAIRMAN, LADIES AND GENTLEMEN: I congratulate my fellow citizens of the Third Agricultural District upon the recurrence under such favorable circumstances of their annual feast of harvest, and upon the prosperity and intelligent interest of the people in the growth and development of the country which this exhibition represents.

Let me at the outset assure you that my pleasure and my pride in what constitutes the true prosperity of our people is no less great because my sphere of labor is different from yours, or because my wares and products are not permitted to compete in your Fair for prize, diploma, or honorable mention. The interests I strive to promote are inseparably linked with the more material, though no more real interests represented here. I take it for granted that you do not expect from me an address upon the great problems with which only practical farmers are prepared to grapple successfully. My studies and habits of thought entirely unfit me for such a task, and I should only make myself ridiculous were I to attempt it. For while I was a farmer's boy, and was reared, I may say, between two rows of corn, my farming experience was acquired under such different conditions of soil, seasons, climate, and productions from those under which you labor, that were it more extensive than it is, it would probably not avail you much. I shall content myself then with a few general thoughts that are at least kindred and co-related to those which usually engage attention on occasions like this.

It is only due to myself and to you that I should also plead as an excuse for the crudity of this address, the extremely short notice given me of the honor conferred upon me by your Directors in inviting me to speak on this occasion. That invitation only reached me on last Sunday in the midst of my professional duties, and I was only able to address myself to the task of preparation on yesterday.

Agriculture is defined as the art of cultivating the soil and obtaining from it those products which are necessary to the support of animal life. It is the oldest of the arts.

"In ancient times the sacred plow employed
The kings and patriarch fathers of mankind."

The first man was a tiller of the ground, and so was his eldest son. It was not till a little later the other element of agriculture, the pastoral, was introduced, and Abel became a keeper of flocks.

The three great forms of human activity as related to the material world are agriculture, manufactures, and commerce, the first dating from Adam, the second from Tubal Cain, the last from Tyre, the first maritime city. Of these three, agriculture alone creates wealth. As printing is the art preservative, so this is the art creative of all arts. Commerce only exchanges commodities, manufactures combine them and improve their quality. The miner simply digs up from the bowels of the earth that which shall be a convenient token and representative of wealth, but all wealth comes from

the soil. The history of agriculture is the history of civilization. Man in a garden was perfect, but the farther he got away from it the more he retrograded into weakness and barbarism. Antæus-like, when he touches the soil he is strong again. We may conceive of a time when man subsisted upon the spontaneous productions of the soil and the easy spoils of the chase, which were obtained with little exertion in that temperate and fertile region, where, all agree, the human race was cradled, under the Orient heaven. The first great want was food and drink. As Christianity was cradled in a manger, so our material civilization was born of a sensation and received its first impulse from the clamor of a physical appetite. The next want was clothing and habitation, and so the second generation of man began to rear animals for their skins, for domestic purposes, and for food. The first agriculture was without implements. In the rich valleys of the Nile, the Euphrates, and the Tigris, humanity's childhood home, the lands were overflowed each year, and the primitive man sowed his treasured grain upon the soft alluvium left by the subsiding waters, and with his hands gathered his first harvests. Perhaps for one thousand years in the history of our race no advancement was made in the art of tilling the soil. It took a long time for man by experience to learn the nutritious qualities of the various cereal grains. It was ages before domestic animals or fertilizers were used as auxiliaries to husbandry, or implements were invented to supplement the strength of human hands. The introduction of implements into Egyptian agriculture can be traced in the hieroglyphics upon its ancient tombs. Egypt was the cradle of agriculture, and therefore of civilization. Upon her fertile plains men first left a nomadic and tribal condition to become owners of the soil and to organize society. The Israelites, a race of nomadic shepherds, were kept in Egypt by Divine Providence four hundred years, to learn the art of agriculture and to prepare themselves to occupy permanently the fertile region of Palestine. And so, after the exodus, we find them no longer a pastoral but an agricultural people.

From Egypt agriculture was introduced into Greece, where we find it in a flourishing state in the time of the historian Hesiod, 1000 B. C., who describes a plow used in his day, which differed in no respect from some I saw the Mexicans farming with in New Mexico, in the year of grace 1881—which shows that the Mexicans are three thousand years behind the times, and present an authentic case of arrested race development. The Greeks had fine imported breeds of horses, cattle, sheep, and swine, three thousand years ago. They understood drainage, fertilization, and subsoiling, and raised most of the varieties of fruit now produced in the same latitude. Much of their literature, too, was bucolic in character. The treatise of Xenophon on husbandry called "Economics," shows that the Greek farmers were an intelligent and reading class, and doubtless the work of that dilettante man of letters on practical agriculture was as much laughed at by them as was Horace Greeley's "What I Know About Farming," in our day.

Greece, however, never carried the cultivation of the soil to such perfection as did Rome in her palmy days. The Greek farmer had to struggle against an intractable soil, to reclaim swamps and morasses and to clear forests, while the unsettled state of society concentrated the population of the Grecian states in the cities, to the detriment of agricultural pursuits. But the farming industry was fostered from the first by the constitution and laws of Rome. A tract of land was granted to every citizen by the State, and each freehold was restricted to about fifty acres, which led to a system of thorough culture, which is only practicable when the land is

cut up into small farms. Farming was the most honorable of employments among the ancient Romans. Cincinnatus was called from the plow to save his country, and went to the capital leaving his oxen standing in the furrow: even as Elisha was called four hundred years before from plowing with twelve yoke of oxen to succeed Elijah in the prophetic office. When Cincinnatus had borne the victorious eagles back to Rome, he returned to his farm again, as did our later Cincinnatus, Washington, when he retired from public life. Cato, the censor, was prouder of his book on farming than of his fame as a hero, an orator, or a statesman. The works of Cato, Varro, Columella, and Pliny on farming are reckoned among the Latin classics, and the *Georgics* of Virgil, written in praise of rural life, are superior in poetic merit to his immortal *Æneid*.

After the downfall of Rome in the fourth century came the dark ages, during which the command of the Master was reversed, and plowshares were beaten into swords and pruning hooks into spears. During all the ages of feudalism agriculture languished, the farmer was a serf, and Europe lay fallow until the waking up of humanity in the sixteenth century, the era of the invention of printing, the revival of letters, the decay of feudalism, and the settlement of America.

Since that time there has been a steady advance in all the arts of peace, and labor and laborer have risen step by step to their present dignity. It was not until the present century, however, that the forces of nature were much used in the cultivation of the soil, and agriculture attained the dignity of a science. The hoe and hand-rake, the sickle and scythe, the five-fingered cradle and the flail, have only been superseded by the cultivator, the horse-rake, the reaper and mower, and the thrashing machine, in the last fifty years. Agricultural chemistry, the science of the adaptation of soils and manures to plants and to each other, is not yet twenty-five years old. All this progress has been made too in spite of prejudice and stupid conservatism. Every labor-saving appliance has been opposed as an innovation. It is claimed by some that this general substitution of machinery for muscular labor is a curse, and shares with the Chinese the blame of low wages, scarcity of employment, and distress among laborers. With the beginning of the present century there sprang up a new civilization, I may almost say, through the employment of those forces of nature that had up to that time been wholly unsubdued, or but partially broken to harness. This century has been the age of machinery, and its use has revolutionized all industries. True, before this century water power was utilized in grinding grain and sawing lumber, and the free winds of heaven were compelled, like the captive Samson, to turn mill-wheels, and become if not hewers of wood at least drawers of water. The Connecticut River was turned over by the Yankee sixteen times on its way to the sea. But now all the forces of nature and all the mechanical powers are yoked together to man's triumphal chariot. The lightning and the light put on his livery; coal deposits, lying in subterranean beds, have been exhumed, and their hoarded sun-rays compelled by human brains to take the place of human muscle in the world's work. The mighty giant, steam, after eluding the halter and harness of man and enjoying a play spell of nearly six thousand years, is now broken to work and becomes a competitor with muscle in every department of labor. With fingers more delicate than a lady's, it has the strength of a giant. It can engrave a seal, or crush mountains of quartz: draw out without breaking a thread as fine as gossamer, or lift a ship of war like a toy in the air: embroider muslin or forge cannon; cut steel into ribbons or drive loaded vessels; drill the eye of a needle or tunnel through the Rocky Mountains. Even the lightning, that

in the ages past slept in the thunder cloud above the mountain top, puts on a paper cap and a leather apron and enters the lists of labor. It drives engines, copies pictures, molds metals, separates ores, explodes the blast in the mine, heals diseases, hatches chickens, carries messages, and does chores more nimbly than the fairy Puck, who could put a girdle round the earth in forty minutes.

This general employment of the mechanical and material forces in the world's work, has aroused much prejudice in some quarters, by which we are enabled to gauge the possible density of human stupidity. In England large petitions go to Parliament every year for the repeal of the patent laws and the prohibition of the manufacture of certain kinds of machinery, and millions of dollars' worth of property has been destroyed by the trades unions in the last twenty years because its owners employed machinery in certain industries hitherto carried on by manual labor. In many manufacturing districts they will not allow the use of machinery in the manufacture of pressed brick or of ribbons, or the use of sewing machines in the manufacture of boots and shoes. In 1879 the County of Limerick, Ireland, paid \$30,000 for property destroyed by the trades unions on account of the employment of machinery. Within the last ten years I have seen machinery and stacks of grain and standing crops burned in the fields of the Santa Clara Valley for the same reason. A California harvester which heads a swath twenty feet wide, and which, with the aid of only three men, cuts, thrashes, and bags fifty acres of grain in one day, is by many regarded as taking the bread out of men's mouths, and to the door of the Chinaman and the inventor is laid the responsibility for the alleged fact that "the rich are growing richer and the poor poorer." But the pessimist and alarmist who make that statement are not in harmony with the facts. The condition of the laborer, whether in town or country, was never so good as now. Six hundred years ago the laborer was not a man in the modern acceptance of that term. The student of Buckle, or Lecky, or Draper, finds that then he was only a serf, a retainer belonging to the soil, and transferred with it. He lodged with the animals, and, like the prodigal, ate with the swine. A stable was his home, and he was scarcely a remove above the rude clod he turned with his share and trod upon. He often wore a brass collar with his master's name engraved upon it. He could not hold property nor carry arms, and his marriage was made and unmade at the pleasure of the lord of the manor. Now he is the equal of the best, the peer of the proudest, in the eyes of the law and of society. There is no function of government he may not exercise, no privilege he may not enjoy. The average farmer or mechanic to-day lives in a better house, sits at a better table, has more of the conveniences and comforts and luxuries of life, has more education and intelligence, and is a much better man than the English nobleman or monarch of three hundred years ago.

Compare their condition now with fifty years ago—about the time that the power loom came into use. Before that time all the cloth used for clothing and house furnishing by the farmers and mechanics of this country was made with the family spinning-wheel and hand-loom, at which our mothers and grandmothers spent many a weary day. A maiden, to obtain her wedding outfit, had first to card the cotton or wool into rolls. Then by ten hours' hard labor she could spin four miles of thread or yarn, walking eight miles while doing so. She must toil weary weeks and months, and even years, to obtain fabrics enough to "set up housekeeping," and when her lover called they would count the hanks of yarn over head, each one bringing the wedding day a little nearer.

Now, in the great New England factories, a girl sits at a machine that spins two thousand one hundred miles of thread per day, and she earns \$6 to \$9 per week, while her mother could only earn from 80 cents to \$1 per week at the hand-loom: just as one woman can make as much lace in a day now as one hundred could then, and wear it too. Formerly it took six months to refine sugar, now it is done in forty minutes: and one man can make as much flour in a day as could one hundred and fifty fifty years ago. In the old days when the formula for fever was, "Let a pint of blood and give a quart of medicine," they used to destroy sensation in a limb to be amputated by immersing it in boiling oil. I should suppose that amputation would be rather a pleasant sensation after all. Now our surgeons freeze the part to be operated upon with ether spray, and saw off an arm or leg while you are reading the morning paper. By and by perhaps they will administer anæsthetics when they present their bills. That would, indeed, be a sweet boom to suffering humanity.

It is the use of machinery that has decreased the cost of staple goods and placed them within easy reach of all. Prints can be purchased now for 5 cents a yard that cost 20 to 30 cents fifty years ago: and woolens that then cost \$1 per yard are dear now at 50 cents. From 1860 to 1880 the cost of living in this country increased 14 per cent, but in the same period the average compensation of laborers advanced 30 per cent. In the same period the manufactures of this country increased 350 per cent, and the population increased 75 per cent, showing that the use of machinery so enlarges the field of and increases the demand for labor as to be a stimulus to immigration. The truth is, necessity is the mother of invention. This country could not produce one tenth of what it does without the aid of modern machinery; and if our products were ten times scarcer they would be ten times dearer, the price always being in an inverse ratio to the production. Two thousand five hundred million pounds of cotton were produced in the South in 1881, and marketed at a cost of \$500,000. But without the cotton gin it would have cost one hundred times that much to put it in the market. Last year five hundred million bushels of wheat were produced in this country, and we received \$180,000,000 for bread-stuffs from England alone. Now all the available muscle of this country could not have harvested one fourth of that crop without the aid of machinery, though every man, woman, and child in the Union had gone into the harvest field. Now, if our grain product were diminished fourfold, what would become of us? Why, in this country alone, steam did last year the work of four hundred million men—more than exist upon the face of the globe. Our railroad engines alone did the work of thirty million men, and there are only ten million in the United States. The inevitable conclusion then is that intelligent labor does not dig its own grave nor cut its own throat when it slips its neck out of the yoke of toil and gives place to the blind giant steam. Every labor-saving appliance enlarges the field of industry, and without them the race could not continue to exist, so that necessity is the fruitful parent of invention.

Man received his commission, his letters patent as viceroy of nature, at creation, but he is only just coming into his kingdom now. "God gave the earth to the children of men," as He gave Canaan to Israel. He deeded the land to them, but they had to conquer it. And as that ancient people were six hundred years conquering and subduing their inheritance, because their vices and their ignorance so weakened and enervated them, so man has been nearly six thousand years achieving the conquest of nature and learning to wield the scepter God placed in his hand. In fact, he has not subdued it yet—the subjugation of the material world has only

just begun. Nature is exceedingly opulent in her forces and resources, but man has gained but an imperfect mastery over them. He has been too idle to learn her secrets, too much enfeebled in mind and body by his vices to assert his sovereignty, and too much occupied with war and bloodshed to cultivate the arts of peace. He has abdicated his throne and sold his birthright for a mess of pottage. Just in proportion as Christianity has put down the vices of man and taught him self-government, has he in his turn subjugated the forces and elements about him. And yet he has only taken the outposts and frontiers of his domain, and there remaineth much land to be possessed. He has only entered the vestibule of the sanctuary of Nature. Her innermost veils have not yet been lifted. The forces he has subdued are only partially tamed—only imperfectly broken to harness. His best steam engine wastes 85 per cent of the power of the steam, and his most perfect mechanical contrivance loses by friction one half of the power applied. Who can doubt that the next fifty years will witness far greater triumphs of mechanical and inventive genius than the last fifty years have seen? These wonders are but a prophecy and a hint of the solution of Nature's ultimate secrets and the utilization of her forces which are in store for mankind. As the dreams of the past are but the actualities of the present, so the achievements of the future will surpass our wildest flights of imagination. Forty-two years ago Professor Low, of St. Joseph College, Bardstown, Kentucky, was committed to the insane asylum because he predicted that a railroad would be built from the Atlantic to the Pacific. We may imagine that there is nothing left to be done, but as Emerson said: "Nothing has been done by men that cannot be better done." I have no doubt that there are powers in nature more swift than the silent feet of electricity which now speed along those webs of iron which are woven like a network of nerves over all lands and under all seas. Some power greater than the steam engine will yet be discovered which will carry products from the producer to the consumer in the twinkling of an eye, and bring the families of man together in such close neighborhood and brotherhood as to make possible "that parliament of nations, that federation of the world," of which Tennyson prophesied. Wait until man can handle steam not only as he can to-day, but in its superheated condition in which it possesses the tremendous force of dynamite itself. The time will come, I suppose, when the Gatling and Parrott guns and the Winchester rifles of to-day, supplanted by more perfect arms, will retire to rest and rust beside the flint-lock muskets and the cross-bows of antiquity. Some marvel of mechanism will yet supplant the sewing machine and clothe our descendants with more than the glory of Solomon, and with scarcely more labor than that put forth by the lilies of the field, which toil not, neither do they spin. The steamship, it may be, will yet rot at the dock, set aside by airships, those "argosies with magic sails, pilots of the purple twilight, dropping down with costly bales," and the locomotive be cast aside with the creaking and toiling prairie schooners, steered by the argonaut of '49 across the wind-swept desert, to make room for the pneumatic or electric railway.

Take for example the solar energy which, by evaporation, draws up three thousand million tons of water three and one half miles every minute, expending a force equal to two thousand seven hundred and fifty-seven million horse-power. Ericsson's solar engine condenses the solar rays on a space ten feet square, and enough force is generated by them to run an engine of eight and one half horse-power ten hours a day. Enough solar energy is being wasted all around us to do all the work of the world, and man will yet hitch his wagon to the sun and give it a harder work to do

than bleaching linen and painting pictures with its swift pencil of light for him. Wait till some cheap and easy method of decomposing water is invented. You know water is composed of about eight parts of oxygen, a supporter of combustion, and one part hydrogen, a highly inflammable gas. By electrolysis the chemist decomposes water into these two gases. Let the scientist who "knows enough to set the river afire" discover some cheaper method than electrolysis, and lo! the ocean steamer will pump her fuel from the sea she rides, and while water converted into steam shall drive our railway engines, water transformed into fuel will feed their furnaces. Some fanciful genius recently predicted that man would yet utilize the force that produces earthquakes for blasting purposes. The same genius predicted that some cute Yankee would utilize the fifty-six million horse-power wasted by the falling torrent of Niagara, while a stock company will make blast furnaces of Vesuvius, Mauna Loa, and Cotapaxi, and another company issue stock for the enterprise of using the Aurora Borealis to light the cities of St. Petersburg, Stockholm, and London. You know it is the Gulf Stream that prevents England having the climate of Labrador. Who knows but that if war ever again breaks out between Jonathan and John Bull, some American De Lesseps will not cut a canal right through Central America, turn the Gulf Stream into the Pacific and freeze England into an iceberg?

Do you say all this is fanciful? It is no more fanciful than it would have seemed fifty years ago to predict that men would travel by steam, talk by lightning, and make that subtle and terrible spirit of the air, electricity, furnish the motive power to our machinery. I believe that the progress of Christianity will yet bring about a moral millenium. So the progress of civilization, science, and art, are destined to produce a physical, a material millenium. The time is to come when our perfected race, redeemed from ignorance and sin, shall rule right royally over their lower natures and over all the forces and elements of matter. The Bible predicts that moral and material millenium when mind shall be enthroned above matter everywhere. Then, the primal curse removed, "instead of the thorn shall come up the fir tree, and instead of the briar the myrtle tree." Then gold shall be cheap enough for paving-stones, and pearls be built into the city walls. In that golden age to come, when men shall beat their swords into plowshares and their spears into pruning-hooks, when the wilderness shall blossom as the rose, ignorance, poverty, toil, vice, and misery shall be known no more. I repeat that man has only captured the outposts of Nature. He has only landed on Plymouth Rock and the whole continent is before him.

But I come now to speak of the dignity and advantages of agriculture as a pursuit. As it is the oldest so it is the most honored of all the arts. He is a philanthropist who makes two blades of grass grow where but one grew before.

Said Daniel Webster: "There are three pillars upon which society rests: Agriculture, Manufactures, and Commerce, but the greatest of these is Agriculture." The king is fed by the field: without it the food of man is limited to the flesh of wild animals and the spontaneous production of the earth. Without it commerce and manufactures could not exist, and the arts and sciences would be unknown. By the culture of the soil men are able to produce more than they require, so that the remainder are enabled to turn their talents and ingenuity to some other useful calling, the products of which may be given to the farmer in exchange for food. Here then is the division of labor which is at the foundation of all social order and civilization, and which is adopted more and more as communities

become enlightened and prosperous. Without such distribution of pursuits little wealth could be accumulated by nations or individuals. The poorest man in this neighborhood is rich compared with what he would be if he could own one hundred square miles of land and live on it alone with his family, cut off from all privileges of society and barter, and having only what he could produce and manufacture with his own hands. Such a man could only produce the bare necessities of life. His food must be the spontaneous products of the soil and the spoils of the chase, his clothing must be the skins of wild animals, his shelter a rude hut, and his only beverage water. But as the productions of the soil are increased, a minute division of labor is made possible, and society takes on that complexity of organization which characterizes a high state of civilization.

Again, in no other pursuit does man stamp so deeply upon the works of God his image and superscription as in this. He modifies the climate in all lands. The increase or diminution of vegetation has a large influence on climate. Removing forests decreases the rainfall in a given region, and planting trees increases it. In former times Europe was much colder than at present. In the fifteenth century the waters of Italy were much colder than now; and the Seine in France and other rivers in that latitude were frozen in winter, while the Thames froze so thick that the inhabitants crossed in wagons from London to Southwark, and oxen were roasted whole on the ice. The clearing of the forests increases the dryness of the air and raises the temperature. Regions of Asia and Northern Africa, which in ancient times were the granaries of Europe, fertile and populous, were made deserts by the clearing of the forests. On the other hand, in parts of Scotland and Southern France the climate has been modified, and the droughts effectually prevented by the planting of forests. In parts of lower Egypt rain was formerly unknown. But vast plantations have been planted and started by irrigation covering many square miles, and copious rains are the result.

Again, the farmer modifies the climate by draining swamps and morasses, and reclaiming tule and other waste lands. Intermittent fevers have disappeared from England, chiefly no doubt in consequence of the high cultivation and careful drainage of the land, while two hundred years ago they were as prevalent in England as in any of our fever and ague regions in the West. Cromwell, Milton, and Bunyan died of intermittent fever and blood-letting, as did our own Washington. Fever and ague lingered in the fens of Lincolnshire until the commencement of this century, but they have been drained, and that type of disease is now unknown in England. Hence the farmer and not "Old Probabilities," is the true clerk of the weather. When he plants a tree for fruit, timber, shade, or decoration, he creates the atmosphere in which he and his family are to live. And while he by underdraining reduces otherwise useless soils to fertility and fruitfulness, he banishes disease and prolongs the life of himself and his neighbors. Thorough cultivation, drainage, and decoration mean more than dollars and cents; they mean health of body and refinement of mind as well. It is the Divine order that utility and beauty should go hand in hand. The earth, like the human countenance, has its expressions. There is upon it the wild and untamed luxuriance of nature, or the softness and elegance of culture. Now its countenance is gloomy, savage, and terrific; and now it is mild, ethereal, and lovely. This face and aspect of nature it is the high prerogative of man to change. Her features are molded into lines of softness and beauty by the plastic hand of toil.

Again agriculture lies at the foundation of all civilization. There can be no wealth, no art, no education otherwise, and so the mercury rises in

the thermometer of civilization as speeds the plow. A tree no more draws its life from the soil than does society. When the pioneer hunter, or trapper, or miner, puts in his first crop of grain, he turns out of the bypath of precarious subsistence into the high road of permanent prosperity, and half an acre furnishes him as much support as eight hundred acres as a hunting range. The products of the soil freight our railroads, furnish the cargoes to our ships, and bring to us that balance of trade which means prosperity and plenty, and the business of the country trembles in the balance till Providence determines the quantity and quality of crops, and until the prairies of Illinois and the plains of Butte and Tehama Counties are heard from. Strike from society all the professions: let the mercantile, and the medical, and the clerical, and even the legal professions, become obsolete, and society would survive them all, for humanity existed for ages without them. But paralyze for one year the farmer's arm: let the plow stand for one year idle in the furrow, or the husbandman's labor fail, and the locomotive would rot on its iron rails, and the great ships drop to pieces in the harbor. Nay, more, gaunt famine would stalk through the earth, and every house would be filled with wailing, as were those of Egypt on that awful passover night, and every mother would be a Rachel weeping for her children, and refusing to be comforted because they are not.

"My lord rides thro' the palace gate,
My lady sweeps along in state,
The sage thinks long on many a thing,
And the maiden muses on marrying;
The minstrel harpeth merrily,
The sailor plows the foaming sea,
The huntsman kills the good red deer,
And the soldier wars without a fear,
Nevertheless, whate'er befall,
The farmer he must feed them all."

If all the products of the earth raised this year in our own country were placed in a bin as wide and as high as this pavilion, it would reach from the Golden Gate to the Sierras, across the Rocky Mountains, across the Mississippi Valley, to the Alleghanies, to the Atlantic. These products would load a great table reaching five times around the earth at the equator, at which all earth's population might sit down, and three times a day for six months that table—such a table as God spreads every day—could be replenished from the annual products of American agriculture. For our agricultural products this year amount to three and one half thousand million dollars in valuation.

And not only is the farmer a finite providence, but he is a finite creator as well. His is the only avocation upon which is put the high honor of finishing and improving the Creator's work. It was the skill and labor of man that made Eden what it was, and so when Adam was ejected for trespassing it went back to wild land again, and its very site is now unknown. But labor restores to man the Eden that he has lost. At its command the cherubim sheathe their swords and stand aside, and man walks once more in an Eden as lovely as were the blissful bowers of the first paradise. Labor makes the wilderness and the solitary place to blossom as the rose. It lays its hand upon the very productions of nature, and its touch is as the touch of Midas, which turned everything into gold. God seems to have only made some things in the rough, and to have left it for man to put on the finishing touches. The apples that blush at praise of their own loveliness in your orchards were but sour and knotty crabs until intelligent labor trained them into lusciousness and largeness. Wheat was a little kernel like wild rice or chess in its natural state, and only became edible

when cultivated. The potato was a small, tough, poisonous tuber, until civilized man took it in hand and by cultivation made it farinaceous, esculent, and palatable. And so with all your fruits. God made them a little, man has made them a great deal. The very flowers are not perfect until they are taught by man to blush and bourgeon in bewitching and bewildering beauty. The gap between the simple hues of our wild flowers and the gorgeous splendors of our gardens and conservatories was bridged by artificial selection. God only gives the separate colors for such a picture as your gardens reveal, and he leaves it to your taste to combine them into a thing of beauty and a joy forever—to paint the lily and add a perfume to the violet. Wild sheep have coarse hair like goats, and the horse undomesticated and in his natural state, was of the mustang type and size. God gave a hint, a suggestion of a horse, and behold! man evolves the magnificent thoroughbred, as sensitive as a lady and as finely organized as a humming bird, whose neck is clothed with thunder, and under whose spurning feet the road rushes like some mountain torrent hastening to the sea. We admire the work of a Rosa Bonheur who could paint bulls so lifelike that you dare not flourish a red bandana in their presence, and horses that like Job's war horse seemed to show by their red nostrils' play, that they heard afar the noise of the captains and the shouting. We admire a Landseer's great animal studies. But you have the original pictures—these are but copies. How much nobler as an achievement to put upon the landscape a massive Clydesdale, or Percheron, or Old Glory, or an Alderney calf with eyes as soft as a gazelle's, or a Devon, or a Durham, ruminating in dumb dignity! Some of you here have abolished whole tribes and types of poor stock, and that is a grander achievement than to paint a thousand pictures. Who would make such rubbish as rhymes when he can make a strawberry? How much nobler to put strength and beauty into a horse than to put a blundering idea into a book! How much better to annex fifty acres to the under side of your farm by deep plowing, than to annex an empire! Every acre of opulent swamp and bounteous tule from which coarse grasses are banished, and frogs, snakes, turtles, and mudhens driven, is really so much land created, and so is it creation when fifty acres is made as productive by deep plowing and fertilizing as one hundred is by "scratchiculture." And I want to say here that California farmers seem to have but imperfectly learned the aphorism "Feed the land and it will feed you." You remember how Victor Hugo in "Les Misérables" tells the Parisians that the sewerage of the great sewer of Paris would feed all Paris if used as a fertilizer instead of being carried to the Seine and to the sea? Japan is about as large as England and Ireland, and only half of it is fit for tillage. It has a larger population than Great Britain and Ireland. And yet while England imports food annually at a cost of millions of pounds, Japan exports grain every year. They have kept up the soil by using every available fertilizer in the kingdom through ages that stretch back to the time of Moses, whereas the soil of California, rich as it is, will not stand our present cut-throat system of agriculture one hundred years. One half of the twelve million acres of New York State have been almost ruined by "skinners" who take everything from the soil and give nothing back. A great deal of farming land in the Eastern States has been exhausted and the farmers have come West. But, farmers of the Pacific Coast, there is no West for you! Our large farms and our continuous cropping without rotation, especially where we have no winter nor snow to rest, fallow, and mellow the soil, and our almost universal neglect of fertilizers, is, it seems to me, the threefold peril to our agricultural future. Your cattle have mouths

and stomachs and must be fed, and those that have been best fed and cared for, other things being equal, will carry off the premiums to-morrow. But a plant has a thousand mouths, and every one must be fed, and every one leaves less for the others. Treat the soil as a factory. If you want a fabric furnish the warp and woof and you shall have it, but don't kill the goose that lays the golden eggs.

Says Mr. Edward Atkinson, "one hundred million people could be sustained and our exports doubled where we now support fifty million, without increasing the area of a single farm, or adding one to their number, by a reasonably good system of agriculture."

Your pursuit, too, my farmer friend, is a school of manhood and of morals, and that fact ought to have weight with men in their choice of vocations. Labor is more than a mere means of making a living, or of making money. Those are only its lowest ends. He who toils merely to eat and drink, to get bed and board and clothes, out of nature, merely pastures upon the surface of things. The man who lives solely for material gains, to add lot to lot, acre to acre, and dollar to dollar, or that he may be able to revel in a swine's heaven of sensual enjoyment, is of the earth earthy, and the assessor ought to tax him as real estate. As I have said, labor has a higher end than to feed and clothe the body, or to add to its possessions, and that is to realize God's ideals, and to perfect our work and His. The true farmer is not content to merely make a living or to merely get rich. He has a noble ambition to excel in his vocation. It is that enthusiasm and emulation that has given us all our improvements in machinery and stock and productions and our model farms; and it is that spirit that this agricultural association is intended to foster.

But labor has a yet higher end than that. Its loftiest aim is to develop the manhood of the laborer. It should not only produce thoroughbred trotters, and slick Devons, and prize cabbages, and pumpkins, and pears, but *men*. John G. Saxe was once present when little rocky Vermont was being laughed at for the meagerness of its material productions. Said the poet, "As for Vermont, she is content to build school houses and churches and raise men."

"Men are the choicest growth our realms supply,
And souls are ripened 'neath our northern sky."

Now there is no pursuit so well adapted to produce some of the most sterling qualities of manhood as the cultivation of the soil. The greatest men have nearly all been nurtured on the bosom of our common mother. In the first place, it is happily the lot of the farmer to follow a calling that perhaps more than any other conduces to physical health and manly vigor. We cannot too highly value bodily energy, a robust constitution, good digestion, steady nerves, and strong, tough sinews. They are as essential to a well developed manhood as a substantial foundation is to a building. You must possess physical health to be intellectually and spiritually at your best. Soul and body are as vitally united as the Siamese twins, so that one cannot take a spree and the other keep sober. Now, the farmer never has to say with Talleyrand, "Oh, that sleep could be bought! Oh, that it were in the market at any quotation!" The man who dreamed that the devil came one night and sat down on his stomach holding the Bunker Hill monument in his lap, did not live on a ranch. Farmers' girls can blush without paint, and farmers' boys do not stay out at night till the small hours. The average of the farmer's life is sixty-four years, the highest of all averages—seven years more than the lawyer's or minister's, ten years more than the doctor's, thirteen years more than the blacksmith

or jeweler, and twenty-eight more than the printer, shoemaker, painter, or tailor. And finally, your avocation is conducive to moral health and well being. Fewer temptations stray into the country and prowl among the fields than lurk in the streets and lanes of towns and cities. This country can never go far wrong so long as three fourths of its voters are farmers. When all men are farmers, when every sword is beaten into a plowshare, and every spear into a pruning hook, and every man dwells under his own vine and fig tree, the millenium will have come. Every occupation of the farmer brings him face to face with God. When he plows his ground and sows his seed he relies not upon the slippery promises of man for the reward of his toil, but upon the covenant of God, that "seed time and harvest shall not fail," and that "whatsoever a man soweth that shall he also reap." When he gathers his crops or his fruit he gets his wages direct from the Divine, and no mortal hand interposes between giver and receiver. He deals directly with Providence and not through middlemen, as do the rest of us. And so depending only upon God, and accountable only to Him, the farmer dares to think what is right, and to speak and act and vote in harmony with his thought.

Rome fell because her city loafers were her only voters. They had no homes to protect—only votes to sell. Our California farmers have wheat to sell, but no votes. They are never the cringing slaves of capital, nor the tools of party bosses, and the plutocrat and politician both have a wholesome fear of the men with the hayseed in their hair.

And now a closing word as to the dignity of this pursuit.

Well has Emerson said: "We look upon the farmer with reverence and respect, when we remember what powers and utilities he so meekly wears." Plain in manners and in dress, he would not shine in palaces, but set down beside him the drawing-room dandy, who is only a whiskered essence and an organized perfume, and the "dude" shrivels into nothingness, while the son of the soil towers in manly stature, like one of the Homeric heroes. I know there is a tendency among farmers' boys to look wistfully to the city, or to the professions, as offering better inducements to honorable ambition, and manual labor seems to be the abhorrence of many. They will clean spittoons, measure tape, take a third assistant clerkship in a junk shop, peddle sewing machines, or liver pads, rather than do honest hard work. A farmer's boy wrote to Horace Greeley, a few years ago, asking his advice about leaving the farm for a professional career, and received the following answer: "Dear sir, I judge by the number of lawsuits and deaths that there are three times as many lawyers and doctors as the country needs, and by the price of flour, butter, and beef, not half enough farmers. I advise you to produce potatoes, rather than pills or pleas." The Lord deliver you from boys and girls who are ashamed of the farmer's vocation and afraid to work. The rearing of such a family is a worse speculation than Mr. Beecher's hogs were on his model farm at Peekskill. He bought the original hog for a dollar and a half, fed him forty dollars worth of corn, and then sold him for about nine dollars. He said that was the only crop he ever made any money on. He lost on the corn, but made seven dollars and a half on the hog, and as for the corn, he didn't expect to make anything on the corn, anyway; and then he had the excitement of raising the hogs, whether he made anything on them or not. So these ornamental sons and daughters who think a professional or city life superior to that of the farm—all that is made by rearing them is the excitement of the thing, and is terribly exciting, too, sometimes, when the farm has to be mortgaged to pay their tailor or millinery bills.

But the farmer in California has, above all others, it seems to me, a

goodly heritage. I remember when, in 1873, I came down the Sacramento Valley for the first time. It seemed to me that in three rainless months God had sealed his withering, blighting curse upon that bleak and fallow landscape. I said, surely these people live on manna from heaven or bacon from Chicago. But I have since learned that the great valleys of California are like horns of plenty pouring down their wealth at the Golden Gate, and that that parched and brown soil was more fertile than the ancient valley of the Nile, and that the Sierras, the snowy bulwarks of this State, "although their lower slopes are as rich in gold as their crests at eve with the gold of sunset, and their farther slopes veined with silver only less white than those great crests at noon," hoard no such wealth as the soil yields in its billowing wheat fields, and its clustered vineyards, and its opulent orchards. The true golden age of California began when the mining industries gave place in some degree to agriculture. It is that that more than all else has given stability and prosperity to the population of this State. The pioneers, the argonauts of '49, came for gold, most of them with no purpose of settling here. They were a nomadic tribe, living in tents or under the open sky, wandering along river courses, climbing up mountain slopes, and diving into cañons and gulches, and when they obtained the coveted booty, hurrying East again, leaving California nothing to remember them by but scars and scratches upon her face. Thus for years wealth flowed steadily out of the Golden Gate, and there was no counter current. So the steady outflow of gold from this coast for many years, while a good thing for the Eastern States, was very hard on California. But the development of its agricultural resources has changed all this by giving permanency to our population, and so turned capital toward us instead of away from us. The farmers and mechanics had \$60,000,000 in the savings banks of this State last year, and have earned in thirty-one years a total of \$800,000,000. We have arable land here to support a population of thirty million, and then our population would be less dense than the population of some of the states of Europe. We have an empire of our own here as large as Spain, stretching itself over ten degrees of latitude, washed on one side by the sea and walled on the other by mountain ranges. Our soil, if tickled with a plow, laughs a bountiful harvest, the yield averaging double to the acre that of the Eastern States. The salubrity and variety of our climate is proverbial; its scenery is grander than any beneath European skies, and its productions are so wonderful as to defy even the American genius for exaggeration.

The star of empire stops in its westward course, and stands still over our young State as did the star of Bethlehem above the manger, and many of the wise men of the east are laying their gold at her feet, and asking for an interest in her future and to sit on the right hand and on the left in her kingdom.

It remains with the farmer more than with any other class to say what that future shall be, and to prove that as a people we are worthy of so goodly an inheritance. Their toil and skill alone can crown our young State a queen here by the western sea, and place in her hands the scepter and at her feet the treasures of material prosperity. Their intelligence and integrity are her strongest bulwarks against the evil teachings and tendencies of our time, which threaten the very foundations of the social fabric in other lands. As conservators of the public weal and the public morals, the sons of the soil will ever be found, I doubt not, as true and trusty as when at Lexington, as an invincible phalanx of liberty and the rights of man. "The embattled farmers stood and fired the shot heard round the world."

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGH-BRED STALLIONS.		
<i>Three Years Old and Over.</i>		
Joe Hamilton	I. L. McDaniel	Biggs.
<i>Two Years Old and Over.</i>		
San Luis Obispo	I. H. Stevenson	Chico.
CLASS II—GRADED STALLIONS.		
<i>Three Years Old and Over.</i>		
Steinman	D. M. Reavis	Chico.
Brignolia	P. Ganett	Chico.
I L	I. L. McDaniel	Biggs.
<i>Two Years Old and Over.</i>		
Blaine	Chas. Fortier	Norman.
<i>One Year Old and Over.</i>		
Belmont	J. H. Guill	Chico.
Rifleman	Matt. Schwein	Chico.
Director	D. M. Reavis	Chico.
Monroe Chief	D. M. Reavis	Chico.
<i>Stallion, with Five Colts.</i>		
Blackbird	D. M. Reavis	Chico.
MARES.		
<i>Three Years Old and Over.</i>		
Ellen Swigert	D. M. Reavis	Chico.
Vic H	D. M. Reavis	Chico.
<i>Two Years Old and Over.</i>		
Baby Mine	D. M. Reavis	Chico.
<i>One Year Old and Over.</i>		
Flora	Matt. Schwein	Chico.
Zandria	D. M. Reavis	Chico.
Emilita	D. M. Reavis	Chico.
<i>Mares and Colts.</i>		
Ellen Swigert	D. M. Reavis	Chico.
Princess	P. Garrett	Chico.
CLASS III—STALLIONS—HORSES OF ALL WORK.		
<i>Three Years Old and Over.</i>		
Dave Hill	J. H. Boyd	Chico.
Black Prince	John Bidwell	Chico.
Mack	E. J. Cartwright	Chico.
Sherman	N. B. Scott	Cana.
King of the West	M. C. Sessions	Cana.
<i>Two Years Old and Over.</i>		
Great Western	I. L. McDaniel	Biggs.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
MARES.		
<i>Three Years Old and Over.</i>		
Manda	M. C. Sessions.....	Cana.
May	M. C. Sessions.....	Cana.
Blanch	M. C. Sessions.....	Cana.
CLASS IV—DRAFT HORSES.		
<i>Three Years Old and Over.</i>		
Webster	D. M. Reavis.....	Chico.
Joe Turk	John Bidwell	Chico.
Butler	John Bidwell	Chico.
<i>Two Years Old and Over.</i>		
Blaine	Chas. Fortier	Norman.
MARES.		
<i>Three Years Old and Over.</i>		
Maggie Schultz	Boone Jones	Chico.
May Simpson	Boone Jones	Chico.
<i>One Year Old and Over.</i>		
Mollie	John Crouch	Chico.
CLASS V—ROADSTER STALLIONS.		
<i>Three Years Old and Over.</i>		
Gabe	I. L. McDaniel	Biggs.
Steinman	D. M. Reavis	Chico.
Brignolia	P. Garrett	Chico.
Hardwood	W. A. Shippee	Nelson.
Singleton	J. W. McIntosh	Nelson.
Arthur Wilkes	L. H. McIntosh	Chico.
MARES.		
<i>Three Years Old and Over.</i>		
Lottie	L. H. McIntosh	Chico.
Vic H	D. M. Reavis	Chico.
<i>Two Years Old and Over.</i>		
Lucy	L. H. McIntosh	Chico.
Baby Mine	D. M. Reavis	Chico.
<i>One Year Old and Over.</i>		
Lida	L. H. McIntosh	Chico.
CLASS VI—CARRIAGE HORSES.		
Vixen	Mrs. S. A. Jones	Chico.
Signet	L. H. McIntosh	Chico.
MARES.		
Rosa Prompter	N. B. Scott	Nelson.
Olive I	I. L. McDaniel	Biggs.
Fanny	Chas. Fortier	Norman.
CLASS VII—ROADSTER TEAMS.		
Andy and Bulwer	D. M. Reavis	Chico.
CLASS VIII—SADDLE HORSES.		
Louis	F. C. Lusk	Chico.
CLASS IX—COLTS.		
Rifleman	Matt. Schwein	Chico.
Sally Bertem	Boone Jones	Chico.
Bessie	Matt. Schwein	Chico.
Director	D. M. Reavis	Chico.
Monroe Chief	D. M. Reavis	Chico.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
Benito.....	Mrs. S. A. Jones	Chico.
Irene.....	Mrs. S. A. Jones	Chico.
CLASS IX—SWEEPSTAKES.		
Rifleman.....	Matt. Schwein.....	Chico.
Great Western.....	I. L. McDaniel.....	Biggs.
Blackbird.....	D. M. Reavis.....	Chico.
Brignolia.....	P. Garrett.....	Chico.
Hardwood.....	W. A. Shippee.....	Nelson.
King of the West.....	M. C. Sessions.....	Can.
CLASS XI—JACKS AND MULES.		
Prince.....	John Crouch.....	Chico.
Liberty.....	John Crouch.....	Chico.
Peacock.....	John Crouch.....	Chico.
(No name).....	John Crouch.....	Chico.
Jennie Flint.....	J. V. Flint.....	Chico.
CLASS I—HEREFORDS—BULLS.		
<i>Three Years Old and Over.</i>		
Grover Cleveland.....	D. M. Reavis.....	Chico.
<i>Two Years Old and Over.</i>		
Hendricks.....	D. M. Reavis.....	Chico.
<i>Bull Calf.</i>		
Duke of Cleveland.....	D. M. Reavis.....	Chico.
COWS.		
<i>Three Years Old and Over.</i>		
Heather Bell.....	D. M. Reavis.....	Chico.
Hyacinth.....	D. M. Reavis.....	Chico.
<i>Two Years Old and Over.</i>		
Luella.....	D. M. Reavis.....	Chico.
<i>One Year Old and Over.</i>		
Minnie.....	D. M. Reavis.....	Chico.
<i>Heifer Calf.</i>		
Lotta.....	D. M. Reavis.....	Chico.
CLASS II—ALDERNEYS—BULLS.		
<i>Three Years Old and Over.</i>		
Ben Leonard.....	Mrs. S. A. Jones.....	Chico.
COWS.		
<i>Three Years Old and Over.</i>		
Belle Ayer.....	Mrs. S. A. Jones.....	Chico.
(No name).....	T. P. Hendricks.....	Chico.
Diana.....	C. V. Hobart.....	Chico.
<i>Two Years Old and Over.</i>		
Princess of Sacramento.....	C. V. Hobart.....	Chico.
CLASS III—DEVONS—BULLS.		
<i>Three Years Old.</i>		
London Duke.....	Boone Jones.....	Chico.
COWS.		
<i>Three Years Old and Over.</i>		
Red Cherry.....	F. W. Miller.....	Chico.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS IV—CATTLE—DURHAM AND HOLSTEIN BULLS.		
<i>Three Years Old and Over.</i>		
Bob	J. H. Guill	Chico.
<i>Two Years Old and Over.</i>		
(No name).....	J. H. Guill	Chico.
<i>One Year Old.</i>		
(No name—Durham).....	John Bidwell	Chico.
Joe (Holstein).....	John Bidwell	Chico.
<i>Bull Calf.</i>		
Sweetser	J. H. Guill	Chico.
<i>Heifer Calf.</i>		
Kate	J. H. Guill	Chico.
SWEEPSTAKES.		
<i>Best Herd.</i>		
Bull and four females.....	D. M. Reavis.....	Chico.
CLASS V—GRADED CATTLE.		
<i>Bulls.</i>		
Modoc (five months)	J. H. Guill	Chico.
Chico (six months)	J. H. Guill	Chico.
Butte (eight months).....	J. H. Guill	Chico.
<i>Heifer Calf.</i>		
Sally	J. H. Guill	Chico.
CLASS III—SWINE.		
Berkshire sow (ten months).....	Matt. Schwein	Chico.
Berkshire boar (eight months).....	B. F. Allen.....	Chico.
Berkshire boar (nine months).....	B. F. Allen.....	Chico.
Berkshire sow (three years).....	B. F. Allen.....	Chico.
Berkshire sow (four months).....	B. F. Allen.....	Chico.
Chester sow (two years).....	Matt. Schwein	Chico.
Poland-China boar (twenty-eight months).....	B. F. Allen.....	Chico.
Poland-China sow (fourteen months).....	B. F. Allen.....	Chico.
Poland-China sow (one year)	B. F. Allen.....	Chico.
Berkshire boar (six months).....	J. T. McIntosh.....	Chico.
Berkshire sow (six months).....	J. T. McIntosh.....	Chico.
Finest and fattest hog	J. H. Guill	Chico.
CLASS IV—POULTRY.		
Pair Brown Leghorns.....	J. H. Guill	Chico.
Pair Bronze turkeys	J. H. Guill	Chico.
Bronze gobbler	J. H. Guill	Chico.
Pair Buff Cochins.....	C. C. Goree.....	Chico.
Pair Black Spanish.....	C. C. Goree.....	Chico.
Pair Dominiques	C. C. Goree.....	Chico.
Pair Game Bantams.....	Willie Bay.....	Chico.
Breeding pen	G. W. Turner.....	Chico.
Game cock	J. T. McIntosh.....	Chico.
Pair Black Game	J. T. McIntosh.....	Chico.
Pair Red Game	J. T. McIntosh.....	Chico.
Breeding pen	C. C. Goree.....	Chico.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGH-BRED STALLIONS.			
<i>Three Years Old and Over.</i>			
Joe Hamilton	I. L. McDaniel	Biggs	\$20 00
<i>Two Years Old and Over.</i>			
San Luis Obispo	J. H. Stevenson	Chico	\$15 00
CLASS II—GRADED STALLIONS.			
<i>Three Years Old and Over.</i>			
Steinman	D. M. Reavis	Chico	\$15 00
Brignolia	P. Garrett	Chico	\$7 50
<i>One Year Old and Over.</i>			
Director	D. M. Reavis	Chico	\$5 00
Monroe Chief	D. M. Reavis	Chico	\$2 50
Blackbird (best stallion and five colts)	D. M. Reavis	Chico	\$15 00
MARES.			
<i>Three Years Old and Over.</i>			
Ellen Swigert	D. M. Reavis	Chico	\$10 00
Vic H	D. M. Reavis	Chico	\$5 00
<i>Two Years Old and Over.</i>			
Baby Mine	D. M. Reavis	Chico	\$5 00
<i>One Year Old and Over.</i>			
Emilita	D. M. Reavis	Chico	\$4 00
Zandria	D. M. Reavis	Chico	\$2 00
Ellen Swigert (best dam and two colts)	D. M. Reavis	Chico	\$10 00
CLASS III—STALLIONS—HORSES OF ALL WORK.			
<i>Three Years Old and Over.</i>			
King of the West	M. C. Sessions	Cana	\$10 00
Black Prince	John Bidwell	Chico	\$5 00
MARES.			
<i>Three Years Old and Over.</i>			
Manda	M. C. Sessions	Cana	\$7 50
Blanche	M. C. Sessions	Cana	\$3 50
CLASS IV—STALLIONS—DRAUGHT HORSES.			
<i>Three Years Old and Over.</i>			
Webster	D. M. Reavis	Chico	\$10 00
Butler	John Bidwell	Chico	\$5 00
<i>Two Years Old and Over.</i>			
Blaine	Chas. Fortier	Norman	\$5 00
Joe and Turk (best pair)	John Bidwell	Chico	\$5 00
DRAUGHT MARES.			
<i>One Year Old and Over.</i>			
Mollie	John Crouch	Chico	\$2 50

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS V—ROADSTERS—STALLIONS.			
<i>Three Years Old and Over.</i>			
Arthur Wilkes	L. H. McIntosh	Chico	\$15 00
Steinman	D. M. Reavis	Chico	\$7 50
GELDINGS.			
Shilo	D. M. Reavis	Chico	\$7 50
Matt M	D. M. Reavis	Chico	\$2 50
MARES.			
<i>Three Years Old and Over.</i>			
Vic H	D. M. Reavis	Chico	\$10 00
<i>Two Years Old and Over.</i>			
Baby Mine	D. M. Reavis	Chico	\$7 50
CLASS VI—CARRIAGE HORSES.			
Bulwer and Andy (best matched pair)	D. M. Reavis	Chico	\$10 00
Rosa	N. B. Scott	Nelson	\$7 50
Vixon	Mrs. S. A. Jones	Chico	\$5 00
CLASS VII—SADDLE HORSES.			
Louis	F. C. Lusk	Chico	\$5 00
CLASS IX—COLTS—HORSE.			
<i>One Year Old.</i>			
Director	D. M. Reavis	Chico	\$7 50
Monroe Chief	D. M. Reavis	Chico	\$2 00
MARES.			
Lady Jarvis	D. M. Reavis	Chico	\$5 00
Yum Yum	D. M. Reavis	Chico	\$1 00
SUCKLING COLTS—HORSE.			
Blackbird, Jr.	D. M. Reavis	Chico	\$5 00
MARES.			
Manda	D. M. Reavis	Chico	\$5 00
Lady Berton	D. M. Reavis	Chico	\$1 00
CLASS X—SWEEPSTAKES.			
Blackbird	D. M. Reavis	Chico	\$25 00
Ellen Swigert	D. M. Reavis	Chico	\$20 00
CLASS XI—JACKS AND JENNIES.			
Prince	John Crouch	Chico	\$10 00
Liberty	John Crouch	Chico	\$5 00
JENNIES.			
Peacock	John Crouch	Chico	\$5 00
(No name)	John Crouch	Chico	\$2 50
Jennie Flint	J. V. Flint	Chico	\$5 00
CLASS I—CATTLE—HEREFORDS—BULLS.			
<i>Three Years Old.</i>			
Grover Cleveland	D. M. Reavis	Chico	\$15 00
<i>Two Years Old.</i>			
Hendricks	D. M. Reavis	Chico	\$10 00
<i>One Year Old.</i>			
Shamrock	D. M. Reavis	Chico	\$5 00
Byron	D. M. Reavis	Chico	\$3 00
Duke of Cleveland (best bull calf)	D. M. Reavis	Chico	\$2 50

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
COWS.			
<i>Three Years Old and Over.</i>			
Heather Bell	D. M. Reavis	Chico	\$15 00
Hyacinth	D. M. Reavis	Chico	\$5 00
<i>Two Years Old and Over.</i>			
Luella	D. M. Reavis	Chico	\$10 00
<i>One Year Old.</i>			
Minnie	D. M. Reavis	Chico	\$5 00
Lotta (best heifer calf)	D. M. Reavis	Chico	\$4 00
CLASS II—ALDERNEYS, AYRSHIRES, AND JERSEYS—BULLS.			
<i>Three Years Old and Over.</i>			
Ben Leonard	Mrs. S. A. Jones	Chico	\$15 00
COWS.			
<i>Three Years Old and Over.</i>			
Cricket (Ayrshire)	T. P. Hendricks	Chico	\$15 00
Diana (Jersey)	C. V. Hobart	Chico	\$5 00
<i>Two Years Old and Over.</i>			
Princess of Sacramento (Jersey)	C. V. Hobart	Chico	\$10 00
CLASS III—DEVONS—COWS.			
<i>Three Years Old and Over.</i>			
Red Cherry	F. W. Miller	Chico	\$15 00
CLASS IV—DURHAMS AND HOLSTEINS—BULLS.			
<i>Three Years Old and Over.</i>			
Bob	J. H. Guill	Chico	\$15 00
<i>Two Years Old and Over.</i>			
Kirk Livingston	John Bidwell	Chico	\$10 00
<i>One Year Old.</i>			
Forest King	John Bidwell	Chico	\$5 00
Joe (Holstein)	John Bidwell	Chico	\$3 00
Senator (best bull calf)	J. H. Guill	Chico	\$2 50
Red Queen (best heifer calf)	J. H. Guill	Chico	\$4 00
SWEEPSTAKES.			
Bull and four cows	D. M. Reavis	Chico	\$20 00
GRADED CATTLE.			
Modoc (bull calf)	J. H. Guill	Chico	\$2 00
Chico (bull calf)	J. H. Guill	Chico	\$1 00
Sally (heifer calf)	J. H. Guill	Chico	\$2 00
CLASS I—SWINE.			
<i>Berkshire Boars.</i>			
Redwood Duke	B. F. Allen	Chico	\$8 00
(No name)	J. H. Guill	Chico	\$4 00
<i>Berkshire Sows.</i>			
Hopton Girl	B. F. Allen	Chico	\$5 00
(No name)	M. Schwein	Chico	\$3 00
<i>Chester Sows.</i>			
(No name)	M. Schwein	Chico	\$2 50

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
<i>Poland Boars.</i>			
Pride of Butte	B. F. Allen	Chico	\$8 00
<i>Poland Sows.</i>			
Maid of Chico	B. F. Allen	Chico	\$5 00
Diana	B. F. Allen	Chico	\$2 50
<i>Fattest Hog.</i>			
.....	M. Schwein	Chico	\$5 00
POULTRY.			
Pair Buff Cochins	C. C. Goree	Chico	\$2 50
Pair Black Spanish	C. C. Goree	Chico	\$2 50
Pair Brown Leghorns	J. H. Guill	Chico	\$2 50
Pair Black Game	J. T. McIntosh	Chico	\$2 50
Game cock (under one year)	J. T. McIntosh	Chico	\$2 50
Pair Red Game	J. T. McIntosh	Chico	\$2 50
Pair Black Game	J. T. McIntosh	Chico	\$2 50
Pair Game Bantams	Willie Bay	Chico	\$2 50
Pair Dominiques	C. C. Goree	Chico	\$2 50
Best breeding pen	G. W. Turner	Chico	\$7 50
Pair Bronze turkeys	J. H. Guill	Chico	\$5 00
Bronze gobbler	J. H. Guill	Chico	\$2 50

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II.			
Buggies and carriages	E. E. Canfield	Chico	Hon. mention.
Single road cart	W. H. Sherwood	Chico	\$3 00
Double road cart	W. J. Pulliam	Chico	\$3 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—TEXTILE FABRICS.			
Ten yards rag carpet	Mrs. M. Salmon	Chico	\$4 00
Ten yards rag carpet	Mrs. A. F. Eitel	Chico	\$2 50
Stocking yarn	Mrs. C. C. Goree	Chico	\$2 00
Hooked rug	Mrs. G. S. Devilbiss	Chico	\$3 00
Braided rugs	Miss Emma Henry	Chico	\$2 00
Knit cotton stockings	Mrs. L. M. Hildreth	Chico	\$1 00
Knit woolen stockings	Mrs. C. C. Goree	Chico	\$1 00
Crochet bedspread	Miss May Sommer	Chico	\$5 00
Knit bedspread	Miss May Sommer	Chico	\$3 00
Knit rug	Mrs. I. C. Day	Chico	\$2 50
Knit mitts	Mrs. A. Henry	Chico	\$1 00
Knit rug	Mrs. S. J. Gilley	Chico	\$3 00

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II—NEEDLEWORK.			
Best made dress	Miss Emma Henry	Chico	\$3 00
Kensington	Miss Emma Henry	Chico	\$2 50
Outline embroidery	Miss Emma Henry	Chico	\$1 00
Silk embroidery	Miss Mabel Dorn	Chico	\$5 00
Crochet lace skirts	Miss Mabel Dorn	Chico	\$1 00
Embroidered table spread	Mrs. J. Shannon	Chico	\$2 00
Kensington embroidered cushion	Mrs. J. Shannon	Chico	\$1 00
Patchwork quilt	Mrs. J. Shannon	Chico	\$3 00
Worsted lounge scarf	Mrs. J. Shannon	Chico	\$2 00
Carriage afghan	Mrs. J. Shannon	Chico	\$2 00
Kensington table scarf	Mrs. J. Shannon	Chico	\$1 00
Outline embroidery on pongee	Mrs. J. Shannon	Chico	\$1 00
Pongee tidy with crochet	Mrs. J. Shannon	Chico	\$1 00
Ribbon embroidery	Mrs. J. Shannon	Chico	\$2 00
Embroidered panel	Mrs. J. Shannon	Chico	\$1 00
Apron with crochet lace	Mrs. J. Shannon	Chico	\$1 00
Banner embroidered in arasene	Mrs. J. Shannon	Chico	\$2 00
Crochet skirt	Mrs. J. Shannon	Chico	\$2 00
Embroidered piano cover	Mrs. J. Shannon	Chico	\$4 00
Display kensington embroidery	Mrs. J. Shannon	Chico	\$2 50
Linen embroidery	Mrs. J. Shannon	Chico	\$2 50
Crochet shawl	Mrs. J. Shannon	Chico	\$2 00
Crochet lace	Miss Mille Empie	Chico	\$1 00
Crochet specimens	Miss Mille Empie	Chico	\$2 00
Feather pincushion	Mrs. G. E. Ames	Chico	\$1 00
Novelty braid	Mrs. J. H. Guill	Chico	\$1 00
Crochet hoods	Mrs. J. H. Guill	Chico	\$1 00
Plush plaque	Mrs. J. H. Guill	Chico	\$1 00
Cardboard work	Mrs. J. H. Guill	Chico	\$2 00
Silk embroidery	Mrs. O. W. Jasper	Chico	\$5 00
Display of fancy articles	Mrs. W. East	Chico	\$3 00
Ottoman	Mrs. W. East	Chico	\$2 00
Chenille embroidery	Mrs. W. East	Chico	\$2 00
Display knitting	Miss Alice Bryant	Chico	\$2 00
Ribbon handkerchief case	Miss Alice Bryant	Chico	\$0 50
Artificial flowers	Mrs. E. A. Warren	Chico	\$2 50
Table scarf	Mrs. E. A. Warren	Chico	\$2 00
Embroidered plaque	Mrs. E. A. Warren	Chico	\$1 00
Silk quilt	Mrs. C. F. Smithson	Chico	\$2 50
Wax flowers	Mrs. C. F. Smithson	Chico	\$2 50
Applique quilt	Mrs. J. H. Guill	Chico	\$2 00
Display outline embroidery	Mrs. J. A. Watson	Chico	\$1 00
Embroidered lambrequin	Mrs. J. A. Watson	Chico	\$2 00
Crazy quilt	Mrs. J. A. Watson	Chico	\$5 00
Lounge scarf	Mrs. J. A. Watson	Chico	\$1 00
Handkerchief case	Mrs. J. Shannon	Chico	\$0 50
Knitted portier	Mrs. L. A. Hildreth	Chico	\$10 00
Pieced table scarf	Mrs. L. A. Hildreth	Chico	\$1 00
Braid work	Miss Emma Henry	Chico	\$2 00
Fine lace work	Miss Emma Henry	Chico	\$2 00
Knitted lace cap	Grandma McIntosh	McIntosh Landing	\$1 00
Worked handbag	Grandma McIntosh	McIntosh Landing	\$0 50
Chair tidy	Grandma McIntosh	McIntosh Landing	\$1 00
Knitted tidy	Grandma McIntosh	McIntosh Landing	\$1 00
Point lace	Miss Carrie Messer	Chico	\$2 00
Knitted toilet set	Grandma McIntosh	McIntosh Landing	\$1 00
Kindergarten display	Miss Carrie Messer	Chico	\$3 00
Skeleton leaves	Mrs. J. H. Guill	Chico	\$1 00
Embroidered picture	Mrs. H. W. Fuller	Chico	\$2 50
Whisk broom holder	Mrs. H. W. Fuller	Chico	\$2 00
Toilet set	Mrs. H. W. Fuller	Chico	\$2 50
Child's afghan	Miss Mille Empie	Chico	\$2 00
Crochet pillow shams	Miss B. Patrick	Chico	\$1 00
Crochet undervests	Miss B. Patrick	Chico	\$0 50

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Twenty-two pieces crochet lace.....	Miss B. Patrick.....	Chico.....	\$2 00
Wax autumn leaves.....	Mrs. A. F. Eitel.....	Chico.....	\$1 00
Knitted lace.....	Mrs. George Devilbiss.....	Chico.....	\$0 50
Darned net.....	Mrs. George Devilbiss.....	Chico.....	\$1 00
Knit collar.....	Mrs. M. V. Salmon.....	Chico.....	\$0 50
Hand sewing.....	Mrs. M. V. Salmon.....	Chico.....	\$1 00
Hand embroidered handkerchief.....	Mrs. M. V. Salmon.....	Chico.....	\$1 00
Paper flowers.....	Mrs. B. Robinson.....	Chico.....	\$1 00
Silk embroidered skirt.....	Mrs. B. Robinson.....	Chico.....	\$1 00
Silk embroidered shawl.....	Mrs. B. Robinson.....	Chico.....	\$1 00
Gents' suspenders.....	Mrs. B. Robinson.....	Chico.....	\$1 00
Crochet hoods.....	Mrs. B. Robinson.....	Chico.....	\$1 00
Paper coral honeysuckles.....	Mrs. B. Robinson.....	Chico.....	\$0 50
Quilted quilts.....	Mrs. C. J. Irwin.....	Chico.....	\$2 00
Silk quilts.....	Mrs. W. A. Tickner.....	Chico.....	\$8 00
Canvas embroidered chair.....	Mrs. I. C. Day.....	Chico.....	\$2 00
Knitted toilet set.....	Mrs. I. C. Day.....	Chico.....	\$0 50
Worsted quilt.....	Mrs. I. C. Day.....	Chico.....	\$2 00
Crochet tidy.....	Miss Mary Sommer.....	Chico.....	\$1 50
Crochet yokes.....	Miss Mary Benner.....	Chico.....	\$1 00
Crochet shawl.....	Mrs. N. S. Rose.....	Chico.....	\$2 00
Crazy quilt.....	Miss Eugene Wood.....	Chico or Pentz.....	\$2 50
JUVENILE DEPARTMENT.			
Outline embroidery.....	Edna Walker.....	Chico.....	\$1 00
Crochet lace.....	Pearl Pilky.....	Chico.....	\$1 00
Kindergarten display.....	Miss Carrie Messer.....	Chico.....	\$5 00
Cardboard picture.....	Adella Nikirk.....	Nelson.....	\$1 00
Charm string.....	Lena Vail.....	Moore's Station.....	\$2 50
CLASS III—MISCELLANEOUS.			
Cage of animals.....	I. A. Hall.....	Chico.....	\$5 00
Display of canned fruit.....	John Bidwell.....	Chico.....	\$5 00
Display of flour.....	John Bidwell.....	Chico.....	\$5 00

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II.			
Blacksmith work.....	J. H. Empie.....	Chico.....	\$5 00
CLASS III.			
Display of stoves.....	Hubbard & Earl.....	Chico.....	Hon. mention.
CLASS IV.			
Piano.....	A. F. Fisher.....	Chico.....	\$5 00
CLASS VI.			
Center table.....	Walter Tickner.....	Chico.....	\$2 50
Scroll work.....	Walter Tickner.....	Chico.....	\$3 00
Gilt picture frames.....	A. F. Fisher.....	Chico.....	\$2 00
CLASS VIII.			
Display of soap.....	G. W. Turner.....	Chico.....	\$5 00
Soft soap.....	C. C. Goree.....	Chico.....	\$2 00
CLASS XI.			
Fox skin robe.....	J. J. Nugent.....	Chico.....	\$2 50
Marine curiosities.....	Miss Emma Henry.....	Chico.....	\$5 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Bushel of wheat	John Bidwell	Chico	\$3 00
Sack of flour	John Bidwell	Chico	\$3 00
Sack of cornmeal	John Bidwell	Chico	\$2 00
Sack of barley	J. H. Guill	Chico	\$2 00
Sack of oats	John Bidwell	Chico	\$2 00
CLASS II.			
Half bushel of potatoes	J. H. Guill	Chico	\$1 00
Half bushel any variety potatoes	J. H. Guill	Chico	\$1 00
Green flesh muskmelon	J. H. Guill	Chico	\$0 50
Half peck field peas	J. H. Guill	Chico	\$0 50
Half bushel sweet potatoes	B. F. Allen	Chico	\$1 00
Six turnip beets	B. F. Allen	Chico	\$0 50
Half bushel white potatoes	James Hegan	Chico	\$1 00
Twelve carrots	James Hegan	Chico	\$0 50
Six sugar beets	John Bidwell	Chico	\$0 50
Peck tomatoes	John Bidwell	Chico	\$0 50
Six marrow squashes	John Bidwell	Chico	\$0 50
Six hubbard squashes	John Bidwell	Chico	\$0 50
Pumpkin	John Bidwell	Chico	\$0 50
Dozen sweet corn	James Hegan	Chico	\$0 50
Yellow muskmelons	John Bidwell	Chico	\$0 50
Half peck pickle peppers	John Bidwell	Chico	\$0 50
Half peck lima beans	John Bidwell	Chico	\$0 50
Half peck white beans	John Bidwell	Chico	\$0 50
Half peck beans	John Bidwell	Chico	\$0 50
Half peck garden peas	John Bidwell	Chico	\$0 50
CLASS III.			
Collection of foliage plants	J. H. Guill	Chico	\$5 00
Cut flowers	J. N. Page	Chico	\$2 50
Bouquets	Miss Mary Bonner	Chico	\$2 50
CLASS V.			
Butter in rolls	David Reid	Chico	\$2 00
Raised biscuits	Mrs. A. F. Eitel	Chico	\$1 00
Soda biscuits	Mrs. John Shannon	Chico	\$1 00
Corn bread	Mrs. A. F. Eitel	Chico	\$1 00
Brown bread	Mrs. John Shannon	Chico	\$1 00
Wheat bread	Mrs. A. F. Eitel	Chico	\$2 00
Display bread	Mrs. John Shannon	Chico	\$3 00

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Six apples	S. L. Skillon	Paradise	\$1 00
Twelve apples	John Bidwell	Chico	\$4 00
Six apples	James Hegan	Chico	\$2 00
Display apples	John Bidwell	Chico	\$5 00
Display apples	Wm. Bonness	Chico	\$2 00
Three varieties pears	B. F. Allen	Chico	\$0 50
Six varieties pears	John Bidwell	Chico	\$2 00
Display pears	John Bidwell	Chico	\$5 00
One variety peaches	Mrs. J. A. Watson	Chico	\$1 00
Thirteen seedling peaches	S. L. Skillon	Paradise	\$3 50
One variety pomegranates	W. V. Groves	Chico	\$1 00

SIXTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
One variety figs	W. V. Groves	Chico	\$2 00
Three varieties seedling fruit	S. L. Skillon	Paradise	\$2 50
Twelve varieties orange trees	W. L. Bradley	Chico	\$2 50
Five varieties tropical fruits	W. V. Groves	Chico	\$5 00
One variety Spanish sweet pepper	W. L. Bradley	Chico	\$2 50
General display fruit	John Bidwell	Chico	\$10 00
One variety English walnuts	W. V. Groves	Chico	\$2 00
One variety almonds	James Hegan	Chico	\$2 00
One variety peanuts	John Bidwell	Chico	\$2 00
Twelve varieties grapes	John Bidwell	Chico	\$5 00
Display grapes	John Bidwell	Chico	\$5 00
CLASS II.			
Blackberry jam	Mrs. N. E. Bachelor	Chico	\$2 00
Red currant jelly	Mrs. N. E. Bachelor	Chico	\$2 00
Red currant jelly	Mrs. N. S. Rose	Chico	\$2 00
Best display preserved fruit	Mrs. N. S. Rose	Chico	\$5 00
Best display canned fruit	Mrs. N. S. Rose	Chico	\$3 00
Branded peaches	B. F. Allen	Chico	\$2 50
Honey	Mrs. J. F. Entler	Chico	\$2 00
Pickles	Mrs. N. S. Rose	Chico	\$2 50
Display fruit in jars	B. F. Allen	Chico	\$5 00
CLASS III.			
Dried Hungarian prunes	M. Schwein	Chico	\$2 00
Dried peaches	B. F. Allen	Chico	\$2 00
Dried figs	John Bidwell	Chico	\$2 00
Dried apples	John Bidwell	Chico	\$2 00
Dried apricots	John Bidwell	Chico	\$2 00
Dried nectarines	John Bidwell	Chico	\$2 00
Display raisins	Matt. Schwein	Chico	\$5 00
Cider vinegar	W. V. Groves	Chico	\$2 50
Wine vinegar	W. V. Groves	Chico	\$2 00
Fruit display	Wm. Bonness	Chico	\$10 00

SEVENTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Water-color painting	Miss M. E. Nichol	Chico	\$2 50
Oil painting, textile fabrics	Miss Emma Henry	Chico	\$2 50
Best collection painting	Miss M. E. Nichol	Chico	\$5 00
Oil portrait	Mrs. O. W. Jasper	Chico	\$5 00
Oil painting	Mrs. O. W. Jasper	Chico	\$5 00
Oil painting	Mrs. S. S. Boynton	Chico	\$5 00
CLASS II.			
Crayon portrait	Miss M. E. Nichol	Chico	\$2 00

NOTE.—The following named premiums were donated to Association: General John Bidwell, \$54; all premiums awarded to John Crouch and Matt. Schwein.

TRANSACTIONS

OF THE

FOURTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Sonoma and Marin.

OFFICERS OF THE ASSOCIATION.

JOSIAH H. WHITE	President.
W. E. COX	Secretary.
LEE ELLSWORTH	Treasurer.

DIRECTORS.

J. H. WHITE	Lakeville.
F. C. DELONG	Novato.
H. MEACHAM	Petaluma.
WM. ZARTMAN	Petaluma.
A. P. OVERTON	Santa Rosa.
JAMES SAMUELS	Healdsburg.
P. J. SHAFTER	Olema.
J. H. DRUMMOND	Glen Ellen.

REPORT.

PETALUMA, December 1, 1887.

To the honorable the State Board of Agriculture :

GENTLEMEN: The Directors of the Fourth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

W. E. COX, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

From entrance fees.....	\$5,219 30	
From sale of tickets.....	3,167 70	
From privileges.....	2,821 65	
From State appropriation.....	1,500 00	
From grand stand.....	1,228 95	
From subscriptions.....	1,078 00	
From memberships.....	250 00	
From hacks and busses.....	240 00	
From premiums donated.....	157 00	
From sale of old ground.....	85 00	
From sale of water.....	58 75	
From donation, W. Page.....	50 00	
For special premiums.....	27 00	
From interest.....	5 95	
		\$15,889 30
Overdraft, December 1, 1887.....		5,678 23
		\$21,567 53

Expenditures.

By overdraft, December 4, 1886.....		\$3,827 68
Paid purses.....	\$8,762 00	
Paid premiums.....	2,014 00	
Paid permanent improvements at Park.....	3,084 75	
Paid general expenses of 1887.....	3,809 60	
Paid warrant No. 291 of 1886.....	155 00	
Paid warrant No. 420 of 1886.....	9 50	
		\$17,831 85
Less following warrants not paid:		
No. 17.....	\$2 00	
No. 18.....	1 50	
No. 31.....	25 00	
No. 42.....	1 50	
No. 43.....	36 00	
No. 56.....	1 00	
No. 61.....	4 50	
No. 570.....	23 50	
		\$95 00
		\$17,739 85
		\$21,567 53

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGH-BRED HORSES—STALLIONS.		
<i>Four Years Old and Over.</i>		
Harry Payton	P. Carroll.....	Bloomfield.
<i>Two Years Old.</i>		
Ironstone.....	P. Carroll.....	Bloomfield.
Ito	P. Carroll.....	Bloomfield.
<i>One Year Old.</i>		
Inkerman	P. Carroll.....	Bloomfield.
<i>Under One Year.</i>		
Idle Boy	P. Carroll.....	Bloomfield.
MARES.		
<i>Four Years Old and Over.</i>		
Nellie	P. Carroll.....	Bloomfield.
<i>Three Years Old.</i>		
Mollie	P. Carroll.....	Bloomfield.
Alice T	J. McM. Shafter.....	San Francisco.
<i>One Year Old.</i>		
Icardy	P. Carroll.....	Bloomfield.
CLASS II—STANDARD TROTTERS—STALLIONS.		
<i>Four Years Old and Over.</i>		
General McClellan, Jr.	J. R. Rose.....	Lakeville.
General McPherson.....	J. R. Rose.....	Lakeville.
Polo	W. Page.....	Penn's Grove.
<i>Three Years Old.</i>		
Mortimer	W. Page.....	Penn's Grove.
<i>Two Years Old.</i>		
McGregor.....	J. Fritsch & Son	Petaluma.
Free Willie	F. W. Loeber.....	St. Helena.
Last Chance	J. A. McNear	Petaluma.
<i>One Year Old.</i>		
Arthur W	George A. Allen.....	Petaluma.
Electric	W. Page.....	Penn's Grove.
MARES.		
<i>Four Years Old and Over.</i>		
Fannie Allen	George A. Allen.....	Petaluma.
Debonair	S. Sperry.....	Petaluma.
<i>Two Years Old.</i>		
Silkey	I. M. Proctor.....	Petaluma.
<i>One Year Old.</i>		
Secreta	W. Page.....	Penn's Grove.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS III—ROADSTERS—STALLIONS.		
<i>Three Years Old.</i>		
Rustic Boy	P. J. Shafter	Olema.
MARES.		
<i>Four Years Old and Over.</i>		
Josephine	J. R. Rose	Lakeville.
Reka Patchen	W. Page	Penn's Grove.
<i>Three Years Old.</i>		
Patti Patchen	W. Page	Penn's Grove.
<i>One Year Old.</i>		
Alice Mc	Greer McDonald	Novato.
CLASS IV—GRADED HORSES—MARES.		
<i>One Year Old.</i>		
Belle	Denman & McNear	Petaluma.
CLASS V—NORMANS AND OTHER FRENCH DRAFT BREEDS—STALLIONS.		
<i>Four Years Old and Over.</i>		
Right Sort	Wm. Hill	Petaluma.
Trumpette	Sonoma County Breed- ers Association	Petaluma.
Hercules	Theo. Skillman	Petaluma.
Ernest Parrot	Theo. Skillman	Petaluma.
<i>Three Years Old.</i>		
Paradis	Theo. Skillman	Petaluma.
<i>Two Years Old.</i>		
Tom Cooper, Jr.	Theo. Skillman	Petaluma.
Duke of Marin	L. A. Devota	Novato.
<i>One Year Old.</i>		
De Chartres	L. A. Devota	Novato.
MARES.		
<i>Four Years and Over.</i>		
Annie	Wm. Hill	Petaluma.
Lady Ann	Wm. Hill	Petaluma.
Queen of the Valley	P. Hennelly	Petaluma.
Maud	R. Crane	Santa Rosa.
<i>One Year Old.</i>		
Bessie	Wm. Hill	Petaluma.
CLASS VI—CLYDESDALE AND OTHER ENGLISH DRAFT BREEDS—STALLIONS.		
<i>Four Years Old and Over.</i>		
Morning Star	Clydesdale Horse Co.	Petaluma.
Narrow Escape	Clydesdale Horse Co.	Petaluma.
Pollock 2d	Sol. Gilmore	Petaluma.
Pride of the West	Sol. Gilmore	Petaluma.
Pride of Cree	Sonoma County Breed- ers Association	Petaluma.
<i>Three Years Old.</i>		
Premier	W. Page	Penn's Grove.
<i>Two Years Old.</i>		
Pointsman, Jr	F. Roberts	Petaluma.
Sol. Gilmore	Clydesdale Horse Co.	Petaluma.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>One Year Old.</i>		
Pointsman 2d	J. A. McNear	Petaluma.
.....	Sol. Gilmore	Petaluma.
Whiskers	W. Page	Penn's Grove.
Alexander Pointsman, Jr.	P. Hennelly	Petaluma.
Buffalo Bill	Denman & McNear	Petaluma.
<i>Under One Year.</i>		
.....	Clydesdale Horse Co.	Petaluma.
.....	N. Wiswell	Petaluma.
Baby	P. Hennelly	Petaluma.
Robert Burns	R. H. Crane	Petaluma.
Pointsman, Jr.	Denman & McNear	Petaluma.
MARES.		
<i>Four Years Old and Over.</i>		
Lady Shirley	N. Wiswell	Petaluma.
Dolly	R. Crane	Santa Rosa.
Maid of the Mist	Denman & McNear	Petaluma.
Blossom 2d	Denman & McNear	Petaluma.
<i>Three Years Old.</i>		
Dora	W. Page	Penn's Grove.
<i>Two Years Old.</i>		
Freckle	W. Page	Penn's Grove.
Annie	R. H. Crane	Petaluma.
<i>One Year Old.</i>		
Nellie Pointsman	P. Hennelly	Petaluma.
Belle	Denman & McNear	Petaluma.
<i>Under One Year.</i>		
.....	C. S. Gibson	Petaluma.
CLASS VII—GENERAL PURPOSES—STALLIONS.		
<i>Three Years Old and Over.</i>		
Royal Studley	Seth Cook	Danville.
Baron Hilton	Seth Cook	Danville.
Prince	R. Crane	Santa Rosa.
Prince Parnell	Wm. Bassett	Tomales.
Electer	Theo. Skillman	Petaluma.
Whippleton, Jr.	John Poplin	St. Helena.
Prince William	L. A. Devota	Novato.
Prince of Marin	P. J. Shafter	Olema.
Alexander 2d	P. Purrington	Sebastopol.
<i>Two Years Old.</i>		
Bob	R. Crane	Santa Rosa.
<i>One Year Old.</i>		
Tom Paine	Greer McDonald	Novato.
<i>Under One Year.</i>		
Grover Cleveland	J. Purrington	Sebastopol.
Star	J. Purrington	Sebastopol.
MARES.		
<i>Three Years Old and Over.</i>		
Susan	F. Roberts	Petaluma.
Kate	L. A. Hardin	Petaluma.
Bayswater	J. Jordan	Petaluma.
Belle	J. A. Box	Glen Ellen.
Nellie	J. A. Box	Glen Ellen.
<i>One Year Old.</i>		
Mollie	J. Purrington	Sebastopol.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Under One Year.</i>		
Daisy.....	J. Purrington.....	Sebastopol.
May Walker.....	J. Purrington.....	Sebastopol.
Sallie Walker.....	J. Purrington.....	Sebastopol.
Carrie D.....	Robert Crane.....	Santa Rosa.
CLASS VIII—CARRIAGE, SADDLE, AND GENTLEMEN'S ROADSTERS.		
<i>Owned by One Person.</i>		
.....	Wm. Behler.....	Lakeville.
.....	— Carter.....	.....
<i>Saddle Mares or Geldings.</i>		
Bay Johnnie.....	F. Roberts.....	Petaluma.
Leonora.....	F. A. Wickersham.....	Petaluma.
<i>Roadsters, Mares, or Geldings, to Pole.</i>		
Maud and Minnie.....	J. R. Rose.....	Lakeville.
Rosa and Mollie.....	R. S. Brown.....	Petaluma.
St. Patrick and Dandy.....	Wm. Brandon.....	Petaluma.
Kittie and Mollie.....	J. Yates.....	Petaluma.
<i>Mares or Geldings to Buggy.</i>		
Barney.....	M. Weber.....	Petaluma.
Prince.....	P. Laulor.....	Petaluma.
Phoebe.....	J. B. Hinkle.....	Petaluma.
Josephine.....	J. R. Rose.....	Lakeville.
CLASS IX—JACKS, JENNIES, AND MULES—JACK.		
<i>Three Years Old and Over.</i>		
Black Night.....	J. A. Box.....	Glen Ellen.
JENNY.		
<i>Three Years Old and Over.</i>		
.....	P. Laulor.....	Petaluma.
CLASS X—SHORT HORNS—BULLS.		
<i>Four Years Old and Over.</i>		
Duke 2d.....	I. R. Jewell.....	Petaluma.
Royal Duke.....	W. Page.....	Penn's Grove.
<i>Three Years Old.</i>		
Sonoma 2d.....	W. Page.....	Penn's Grove.
<i>Two Years Old.</i>		
Mugwump.....	W. Page.....	Penn's Grove.
Sharon Bell Duke.....	M. D. Hopkins.....	Petaluma.
<i>One Year Old.</i>		
Blaisdale 26th.....	R. H. Crane.....	Petaluma.
Takes the Cake.....	W. Page.....	Penn's Grove.
Patsy Carroll.....	W. Page.....	Penn's Grove.
Rosicrucian.....	W. Page.....	Penn's Grove.
Oxford Chief.....	W. Page.....	Penn's Grove.
Cherpoys.....	W. Page.....	Penn's Grove.
Macar.....	W. Page.....	Penn's Grove.
Gold Prince.....	W. Page.....	Penn's Grove.
Rodeo.....	W. Page.....	Penn's Grove.
Belt.....	W. Page.....	Penn's Grove.
Trefoil.....	W. Page.....	Penn's Grove.
Boom.....	W. Page.....	Penn's Grove.
Little Pet, Jr.....	J. Lynch.....	Petaluma.
Orrich 2d.....	J. Lynch.....	Petaluma.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
COWS.		
<i>Four Years Old and Over.</i>		
Lucy	J. R. Jewell	Petaluma.
Daisy	J. R. Jewell	Petaluma.
Belle Medico	W. Page	Penn's Grove.
Belle Sonoma	W. Page	Penn's Grove.
Maita	W. Page	Penn's Grove.
Zerka Princess	W. Page	Penn's Grove.
<i>Three Years Old.</i>		
Peerless Rose	W. Page	Penn's Grove.
<i>Two Years Old.</i>		
Belle Sonoma 2d	W. Page	Penn's Grove.
Carolina	W. Page	Penn's Grove.
Cherry Rose	W. Page	Penn's Grove.
Gold Ore	W. Page	Penn's Grove.
<i>One Year Old.</i>		
Belle of the Mead	W. Page	Penn's Grove.
Mollie Maid	W. Page	Penn's Grove.
<i>Under One Year.</i>		
Belle Cheeseit	J. R. Jewell	Petaluma.
Gold Nut	W. Page	Penn's Grove.
Gold Nut	W. Page	Penn's Grove.
<i>Bulls of Any Age.</i>		
Royal Duke	W. Page	Penn's Grove.
Sonoma 2d	W. Page	Penn's Grove.
Mugwump	W. Page	Penn's Grove.
<i>Cows of Any Age.</i>		
Belle Medico	W. Page	Penn's Grove.
Belle Sonoma	W. Page	Penn's Grove.
Carolina	W. Page	Penn's Grove.
CLASS XIV—POLLED ANGUS—BULLS.		
<i>Four Years Old and Over.</i>		
Marathon of Fintry	Seth Cook	Danville.
<i>Three Years Old.</i>		
Admiral	Seth Cook	Danville.
<i>Under One Year.</i>		
Doubt	Seth Cook	Danville.
Jerry	Seth Cook	Danville.
Vigilant	Seth Cook	Danville.
COWS.		
<i>Four Years Old and Over.</i>		
Violet 2d of Blairshamwell	Seth Cook	Danville.
<i>Three Years Old.</i>		
Barthy's Lass	Seth Cook	Danville.
Rosella 2d	Seth Cook	Danville.
Doras Lass	Seth Cook	Danville.
<i>Two Years Old.</i>		
Jessamine	Seth Cook	Danville.
Jett	Seth Cook	Danville.
Languid	Seth Cook	Danville.
<i>One Year Old.</i>		
Princess Lydia	Seth Cook	Danville.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Under One Year.</i>		
Bannerette	Seth Cook	Danville.
CLASS XVIII.—HOLSTEINS—BULLS.		
<i>Two Years Old.</i>		
Oro Blanco	J. H. White	Lakeville.
Leicester	J. H. White	Lakeville.
<i>One Year Old.</i>		
Laurin	J. H. White	Lakeville.
Hanchuca	J. H. White	Lakeville.
Diamond Dick	Edward Steiger	Agua Caliente.
<i>Under One Year.</i>		
Mateo	J. H. White	Lakeville.
Lomitas	J. H. White	Lakeville.
COWS.		
<i>Four Years Old and Over.</i>		
Annemie	J. H. White	Lakeville.
Dagotine	J. H. White	Lakeville.
Winfridalla	J. H. White	Lakeville.
Letta	J. H. White	Lakeville.
Alzy	J. H. White	Lakeville.
<i>Three Years Old.</i>		
Maynard	J. H. White	Lakeville.
Annot Lyle	J. H. White	Lakeville.
<i>Two Years Old.</i>		
Ocala	J. H. White	Lakeville.
Darkness	J. H. White	Lakeville.
Lupin	J. H. White	Lakeville.
<i>One Year Old.</i>		
Lasquite	J. H. White	Lakeville.
Sierra	J. H. White	Lakeville.
<i>Under One Year.</i>		
Bumblebee	J. H. White	Lakeville.
Chiquita	J. H. White	Lakeville.
<i>Bulls of Any Age.</i>		
Oro Blanco	J. H. White	Lakeville.
Leicester	J. H. White	Lakeville.
<i>Cows of Any Age.</i>		
Annemie	J. H. White	Lakeville.
Winfridalla	J. H. White	Lakeville.
CLASS XX.—JERSEYS AND GUERNSEYS—BULLS.		
<i>Four Years Old and Over.</i>		
Olimpo	Roy Brothers	San Geronimo.
Favorite	Bliss Estate	Petaluma.
Fry	J. A. McNear	Petaluma.
<i>Three Years Old.</i>		
Nantasket	Bliss Estate	Petaluma.
<i>Two Years Old.</i>		
Wildwood	Hall Brothers	Petaluma.
Taurus of Scituate	P. Laulor	Petaluma.
<i>* One Year Old.</i>		
Romulus of Marin	Roy Brothers	San Geronimo.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Under One Year.</i>		
Boom	H. P. Brainerd	Petaluma.
COWS.		
<i>Four Years Old and Over.</i>		
Moorish Maid	Roy Brothers	San Geronimo.
<i>Two Years Old.</i>		
Juanita 2d	Bliss Estate	Petaluma.
<i>One Year Old.</i>		
Maggie	H. P. Brainerd	Petaluma.
AYRSHIRES—BULLS.		
<i>Two Years Old.</i>		
Ethelbert	Geo. Bement & Son	Redwood City.
<i>One Year Old.</i>		
Lord Faxion	Geo. Bement & Son	Redwood City.
<i>Under One Year.</i>		
Red Mikado	Geo. Bement & Son	Redwood City.
Hotspur	Geo. Bement & Son	Redwood City.
COWS.		
<i>Four Years Old and Over.</i>		
Elaine	Geo. Bement & Son	Redwood City.
Marian	Geo. Bement & Son	Redwood City.
<i>Three Years Old.</i>		
Sybilla	Geo. Bement & Son	Redwood City.
<i>Two Years Old.</i>		
Sylph	Geo. Bement & Son	Redwood City.
<i>One Year Old.</i>		
Ethelberta	Geo. Bement & Son	Redwood City.
<i>Under One Year.</i>		
Faxionia	Geo. Bement & Son	Redwood City.
CLASS XXVI—SPANISH MERINOES.		
Rams, two years old and over	J. Laulor	Petaluma.
Ewes, two years old and over	J. Laulor	Petaluma.
Ewes, one year old	J. Laulor	Petaluma.
Ewe lambs, under one year	J. Laulor	Petaluma.
CLASS XXIX—SOUTH SHROPSHIRE, OXFORD, AND HAMPSHIRE DOWNS.		
Rams, two years old and over	Geo. Bement & Son	Redwood City.
Rams, two years old and over	R. H. Crane	Petaluma.
Rams, one year old	R. H. Crane	Petaluma.
Ram lambs, under one year	R. H. Crane	Petaluma.
Ewes, two years old and over	Geo. Bement & Son	Redwood City.
Ewes, two years old and over	R. H. Crane	Petaluma.
Ewes, one year old	R. H. Crane	Petaluma.
Ewe lambs, under one year	R. H. Crane	Petaluma.
CLASS XXX—GRADED FLEECES.		
Combing wools	Pomona Grange	Santa Rosa.
CLASS XXXIII—SWINE—CHINA-POLAND.		
Boar, one year old and over	R. H. Crane	Petaluma.
Boar, six months old	R. H. Crane	Petaluma.
Sow, one year old and over	R. H. Crane	Petaluma.
Sow, and five pigs under six months	R. H. Crane	Petaluma.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS XXXIV—PURE BRED POULTRY.		
Light Brahma fowls	Mrs. Wm. Hill	Petaluma.
Light Brahma fowls	J. L. Winans	Petaluma.
Light Brahma fowls	W. D. Freeman	Tomales.
Light Brahma chicks	Isabel Walker	Petaluma.
Light Brahma chicks	Mrs. Wm. Hill	Petaluma.
Light Brahma chicks	J. L. Winans	Petaluma.
Light Brahma chicks	J. H. Gwinn	Petaluma.
Dark Brahma fowls	P. Meadows	Petaluma.
Buff Cochín fowls	Mrs. Wm. Hill	Petaluma.
Buff Cochín fowls	P. H. Meadows	Petaluma.
Buff Cochín chicks	P. H. Meadows	Petaluma.
Plymouth Rock fowls	S. H. Church	Petaluma.
Plymouth Rock fowls	J. Blackburn	Petaluma.
Plymouth Rock chicks	Isabel Walker	Petaluma.
Plymouth Rock chicks	J. Blackburn	Petaluma.
Wyandotte chicks	Isabel Walker	Petaluma.
Wyandotte chicks	J. Blackburn	Petaluma.
Dominique chicks	Isabel Walker	Petaluma.
Black Spanish fowls	S. H. Church	Petaluma.
Black Spanish chicks	Isabel Walker	Petaluma.
White Leghorn chicks	Isabel Walker	Petaluma.
Brown Leghorn fowls	S. H. Church	Petaluma.
Brown Leghorn fowls	W. D. Freeman	Tomales.
Black Leghorn fowls	W. D. Freeman	Tomales.
Brown Leghorn chicks	S. H. Church	Petaluma.
Silver-Spangled Hamburg fowls	S. H. Church	Petaluma.
Silver-Spangled Hamburg chicks	Isabel Walker	Petaluma.
Silver-Spangled Hamburg chicks	S. H. Church	Petaluma.
Houdan fowls	W. D. Freeman	Tomales.
Brown-Red Game fowls	O. Elmore	Petaluma.
Brown-Red Game chicks	O. Elmore	Petaluma.
Duckwing Game fowls	O. Elmore	Petaluma.
Black-Breasted Game fowls	O. Elmore	Petaluma.
Black-Breasted Game fowls	P. Mullally	Bloomfield.
Black-Breasted Game chicks	O. Elmore	Petaluma.
Black-Breasted Game chicks	P. Mullally	Bloomfield.
Bantam fowls	Isabel Walker	Petaluma.
Bantam fowls	Mrs. L. H. Patty	Petaluma.
Toulouse geese	A. Keenan	Lakeville.
Toulouse geese	W. D. Freeman	Tomales.
Toulouse geese	R. H. Crane	Petaluma.
Toulouse geese	O. Elmore	Petaluma.

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—AGRICULTURAL PRODUCTS.		
Sack of Australian wheat	W. D. Freeman	Tomales.
Sack of Australian wheat	R. Crane	Santa Rosa.
Sack of barley	R. Crane	Santa Rosa.
Sack of oats	W. D. Freeman	Tomales.
Sheaf of wheat	T. M. Carr	Petaluma.
Sheaf of wheat	R. Crane	Santa Rosa.
Sheaf of wheat	D. T. Whitlatch	Petaluma.
Sheaf of wheat	C. D. Grover	Petaluma.
Sheaf of barley	G. A. Allen	Petaluma.
Sheaf of barley	T. M. Carr	Petaluma.
Sheaf of barley	T. C. Putnam	Petaluma.
Sheaf of barley	N. L. Wiswell	Petaluma.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Sheaf of barley	D. F. Whitlach	Petaluma.
Sheaf of barley	C. S. Gibson	Petaluma.
Sheaf of barley	P. Mullally	Bloomfield.
Sheaf of oats	E. L. Charles	Petaluma.
Sheaf of oats	G. A. Allen	Petaluma.
Sheaf of oats	T. M. Carr	Petaluma.
Sheaf of oats	W. D. Freeman	Tomales.
Sheaf of oats	A. C. Shelton	Petaluma.
Sheaf of oats	P. Mullally	Bloomfield.
Sack of wheat flour	Percival Milling Co.	Petaluma.
Sack of buckwheat flour	Percival Milling Co.	Petaluma.
Sack of shelled corn	R. Crane	Santa Rosa.
Collection of potatoes, five varieties	A. Weissband	Petaluma.
Collection of potatoes, five varieties	R. Andrews	Petaluma.
Collection of potatoes, five varieties	P. Mullally	Bloomfield.
Single variety of potatoes	Isabel Walker	Petaluma.
Single variety of potatoes	J. Alkier	Petaluma.
Single variety of potatoes	C. W. Hunt	Petaluma.
Single variety of potatoes	N. L. Wiswell	Petaluma.
Single variety of potatoes	A. I. Robinson	Petaluma.
Single variety of potatoes	R. Andrews	Petaluma.
Single variety of potatoes	P. Mullally	Bloomfield.
Collection of onions	L. Vestal	Petaluma.
Exhibit of squashes	A. Weissband	Petaluma.
Exhibit of squashes	J. Alkier	Petaluma.
Exhibit of squashes	T. C. Putnam	Petaluma.
Exhibit of squashes	N. L. Wiswell	Petaluma.
Exhibit of squashes	D. F. Whitlach	Petaluma.
Exhibit of squashes	R. Andrews	Petaluma.
Exhibit of squashes	H. D. Gossage	Petaluma.
Exhibit of pumpkins	J. Alkier	Petaluma.
Exhibit of pumpkins	D. M. Winans	Petaluma.
Exhibit of pumpkins	A. C. Shelton	Petaluma.
Exhibit of peas	James Bloom	Petaluma.
Exhibit of beans	James Bloom	Petaluma.
Exhibit of sugar beets	J. Stewart	Petaluma.
Exhibit of sugar beets	C. S. Gibson	Petaluma.
Exhibit of mangel-wurzel beets	I. Walker	Petaluma.
Exhibit of mangel-wurzel beets	T. C. Putnam	Petaluma.
Exhibit of mangel-wurzel beets	B. Cary	Petaluma.
Exhibit of mangel-wurzel beets	R. Crane	Santa Rosa.
Exhibit of mangel-wurzel beets	C. S. Gibson	Petaluma.
Exhibit of mangel-wurzel beets	D. S. Dickson	Petaluma.
Exhibit of mangel-wurzel beets	T. C. Putnam	Petaluma.
Six blood beets	B. Cary	Petaluma.
Six blood beets	C. S. Gibson	Petaluma.
Six blood beets	E. L. Charles	Petaluma.
Exhibit of rutabagas	D. F. Whitlach	Petaluma.
Exhibit of rutabagas	James Bloom	Petaluma.
Exhibit of rutabagas	L. Vestal	Petaluma.
Exhibit of turnips	D. F. Whitlach	Petaluma.
Exhibit of turnips	Thomas Shelton	Petaluma.
Exhibit of turnips	James Bloom	Petaluma.
Exhibit of corn on stalk	A. Weissband	Petaluma.
Exhibit of corn on stalk	N. L. Wiswell	Petaluma.
Exhibit of corn on stalk	D. F. Whitlach	Petaluma.
Exhibit of corn on stalk	C. S. Gibson	Petaluma.
Exhibit of corn on stalk	H. D. Gossage	Petaluma.
Exhibit of corn on stalk	R. H. Crane	Petaluma.
Exhibit of corn on stalk	O. Elmore	Petaluma.
Exhibit of corn on stalk	J. Merritt	Petaluma.
Exhibit of cabbage	A. Weissband	Petaluma.
Exhibit of watermelons	E. L. Charles	Petaluma.
Exhibit of watermelons	C. S. Gibson	Petaluma.
Exhibit of muskmelons	E. L. Charles	Petaluma.
Exhibit of muskmelons	C. S. Gibson	Petaluma.
Exhibit of cantaloupes	T. D. Morris	Sonoma.
Exhibit of cantaloupes	E. L. Charles	Petaluma.
Exhibit of cantaloupes	C. S. Gibson	Petaluma.
Exhibit of carrots	A. Weissband	Petaluma.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Exhibit of carrots	B. Cary	Petaluma.
Exhibit of pie plant	R. Andrews	Petaluma.
Display of produce raised on one farm	C. S. Gibson	Petaluma.
CLASS II—FRUITS, GRAPES, NUTS, ETC.		
Largest and best collection of fruits raised in one orchard	I. Parker	Sebastopol.
Largest and best collection of fruits raised in one orchard	F. F. Ennis	Petaluma.
Largest and best collection of fruits raised in one orchard	J. Merritt	Petaluma.
Exhibit of apples	D. M. Winans	Petaluma.
Exhibit of apples	C. S. Wightman	Sebastopol.
Exhibit of apples	J. Merritt	Petaluma.
Single variety of six apples	C. W. Hunt	Petaluma.
Single variety of six apples	A. I. Robinson	Healdsburg.
Single variety of six apples	C. S. Gibson	Petaluma.
Single variety of six apples	F. F. Ennis	Petaluma.
Single variety of six apples	J. Merritt	Petaluma.
Six varieties of six apples	I. Parker	Sebastopol.
Six varieties of six apples	Jas. Bloom	Petaluma.
Six varieties of six apples	J. Merritt	Petaluma.
Collection of pears	I. Parker	Sebastopol.
Collection of pears	R. Andrews	Petaluma.
Collection of pears	C. S. Gibson	Petaluma.
Collection of pears	Jas. Bloom	Petaluma.
Single variety of six pears	Mrs. W. H. Pepper	Petaluma.
Single variety of six pears	I. Parker	Sebastopol.
Single variety of six pears	R. Andrews	Petaluma.
Single variety of six pears	C. S. Gibson	Petaluma.
Single variety of six pears	C. D. Grover	Petaluma.
Six varieties of pears	R. Andrews	Petaluma.
Exhibit of peaches	Mrs. W. H. Pepper	Petaluma.
Exhibit of peaches	C. W. Hunt	Petaluma.
Exhibit of peaches	I. Parker	Sebastopol.
Exhibit of peaches	J. Bloom	Petaluma.
Exhibit of peaches	J. Merritt	Petaluma.
Exhibit of plums	I. Parker	Sebastopol.
Exhibit of plums	F. F. Ennis	Petaluma.
Exhibit of plums	J. Bloom	Petaluma.
Exhibit of plums	J. Merritt	Petaluma.
Six quinces	C. Wightman	Sebastopol.
Six quinces	C. S. Gibson	Petaluma.
Six quinces	C. D. Grover	Petaluma.
Six quinces	S. H. Cassidy	Petaluma.
Collection of oranges	T. D. Morris	Sonoma.
Collection of oranges	W. H. Pepper	Petaluma.
Collection of lemons	T. D. Morris	Sonoma.
Collection of lemons	Mrs. W. H. Pepper	Petaluma.
Collection of grapes raised in one orchard	T. D. Morris	Sonoma.
Exhibit of foreign grapes	T. D. Morris	Sonoma.
Exhibit of California grapes	T. D. Morris	Sonoma.
Largest bunch of grapes, any variety	T. D. Morris	Sonoma.
Collection of almonds	T. D. Morris	Sonoma.
Collection of almonds	C. Wightman	Sebastopol.
Collection of English walnuts	T. D. Morris	Sonoma.
Collection of English walnuts	C. Wightman	Sebastopol.
CLASS III—PRESERVED FRUITS, ETC.		
Exhibit of kiln-dried fruits, five varieties	C. Wightman	Sebastopol.
Exhibit of sun-dried fruit, five varieties	F. F. Ennis	Petaluma.
Exhibit of sun-dried fruit, five varieties	A. H. Cassidy	Petaluma.
Exhibit of sun-dried apples	F. F. Ennis	Petaluma.
Exhibit of sun-dried apples	A. H. Cassidy	Petaluma.
Exhibit of kiln-dried apples	C. Wightman	Sebastopol.
Exhibit of kiln-dried apples	A. H. Cassidy	Petaluma.
Exhibit of kiln-dried peaches	C. Wightman	Sebastopol.
Exhibit of sun-dried peaches	F. F. Ennis	Petaluma.
Exhibit of sun-dried peaches	A. H. Cassidy	Petaluma.
Exhibit of kiln-dried plums	C. Wightman	Sebastopol.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Exhibit of sun-dried plums.....	F. F. Ennis	Petaluma.
Exhibit of sun-dried plums.....	A. H. Cassidy	Petaluma.
Exhibit of dried plums, seeded	A. H. Cassidy	Petaluma.
Exhibit of dried plums, seeded	C. Wightman	Sebastopol.
Exhibit of dried plums, seeded	F. F. Ennis	Petaluma.
Exhibit of raisins	C. Wightman	Sebastopol.
Exhibit of domestic canned fruits.....	W. H. Van Marter	Petaluma.
Exhibit of domestic canned fruits.....	Mrs. C. W. Hunt	Petaluma.
Exhibit of domestic canned fruits.....	Mrs. J. C. Diamond	Petaluma.
Exhibit of domestic canned fruits.....	Mrs. I. Parker	Sebastopol.
Exhibit of domestic canned fruits.....	Mrs. N. K. French	Petaluma.
Exhibit of jellies	W. H. Van Marter	Petaluma.
Exhibit of jellies	Mrs. C. W. Hunt	Petaluma.
Exhibit of jellies	Mrs. S. C. Pierce	Petaluma.
Exhibit of jellies	Mrs. J. C. Diamond	Petaluma.
Exhibit of jellies	Mrs. I. Parker	Sebastopol.
Exhibit of jellies	Mrs. A. H. Patty	Petaluma.
Exhibit of jellies	Mrs. N. K. French	Petaluma.
Exhibit of jellies	Mrs. O. Elmore	Petaluma.
Exhibit of preserves	Mrs. J. C. Diamond	Petaluma.
Exhibit of preserves	Mrs. N. K. French	Petaluma.
Exhibit of pickles	Mrs. A. H. Patty	Petaluma.
Exhibit of pickles	Mrs. N. K. French	Petaluma.
Exhibit of catsup	W. H. Van Marter	Petaluma.
Exhibit of catsup	Mrs. E. R. Charles	Petaluma.
Exhibit of catsup	Mrs. A. H. Patty	Petaluma.

CLASS IV—BUTTER, CHEESE, AND BACON.

Ten rolls of fresh butter	D. S. Dickson	Petaluma.
Ten rolls of fresh butter	W. Page	Penn's Grove.
Ten rolls of fresh butter	James Bloom	Petaluma.
Exhibit of cheese	J. R. Jewell	Petaluma.
Exhibit of cheese	E. P. Nisson	Petaluma.
Exhibit of hams	R. Crane	Santa Rosa.
Exhibit of bacon	R. Crane	Santa Rosa.

CLASS V—WINES, CIDER, ALE, ETC.

Exhibit of wines	Geo. T. Hooper	Sonoma.
Exhibit of red wine	Geo. T. Hooper	Sonoma.
Exhibit of white wine	Geo. T. Hooper	Sonoma.
Exhibit of blackberry wine	Mrs. A. H. Patty	Petaluma.
Exhibit of brandy	Geo. T. Hooper	Sonoma.
Exhibit of cider	A. Weissand	Petaluma.
Exhibit of cider	Mrs. A. H. Patty	Petaluma.
Exhibit of blackberry brandy	Mrs. A. H. Patty	Petaluma.
Exhibit of blackberry cordial	Mrs. A. H. Patty	Petaluma.

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—DOMESTIC MANUFACTURES.		
Exhibit of furniture	Ellsworth & Northrup	Petaluma.
Exhibit of upholstery	Ellsworth & Northrup	Petaluma.
Exhibit of iron castings	W. H. Worth	Petaluma.
Exhibit of boots	Breeze & Broad	Petaluma.
Exhibit of woolen yarn	Torr & Newburgh	Petaluma.
Exhibit of blankets	Torr & Newburgh	Petaluma.
Exhibit of tailoring	Mrs. A. H. Patty	Petaluma.
Exhibit of bookbinding	J. A. Cowen	Petaluma.
Exhibit of brooms	A. Doty	Petaluma.

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Model gate	S. J. Johnson	Petaluma.
Exhibit of tinware	Kopf & Gross	Petaluma.
Sign and ornamental painting	A. A. Smith	Petaluma.
Sign and ornamental painting	Ellsworth & Northrup	Petaluma.
Exhibit of marble work	W. S. Brown	Petaluma.
Specimen of stone cutting	W. S. Brown	Petaluma.
Best chairs	Ellsworth & Northrup	Petaluma.
Mechanical skill by an apprentice	W. P. Inguerson	Petaluma.
CLASS II—CARRIAGES, BUGGIES, AND WAGONS.		
Exhibit of carriages, buggies, and wagons	Wm. Zartman & Co.	Petaluma.
Top buggy	Wm. Zartman & Co.	Petaluma.
Breaking cart	Wm. Zartman & Co.	Petaluma.
Two-wheeled vehicles	E. Hopes	Petaluma.
Two-wheeled vehicles	Wm. Zartman & Co.	Petaluma.
Spring wagon	E. Hopes	Petaluma.
Spring wagon	Wm. Zartman & Co.	Petaluma.
Carriage painting	A. A. Smith	Petaluma.
Carriage painting	H. Pimm	Petaluma.
Carriage trimming	Ellsworth & Northrup	Petaluma.
CLASS III—SADDLERY AND HARNESS.		
Exhibit of saddlery	Ellsworth & Northrup	Petaluma.
Exhibit of saddlery	Gus. A. Walsh	Petaluma.
Set double harness	Ellsworth & Northrup	Petaluma.
Set double harness	Gus. A. Walsh	Petaluma.
Set single harness	Ellsworth & Northrup	Petaluma.
Set single harness	Gus. A. Walsh	Petaluma.
Best saddle	Ellsworth & Northrup	Petaluma.
Best saddle	Gus. A. Walsh	Petaluma.
CLASS IV—AGRICULTURAL IMPLEMENTS.		
Wine press	W. H. Worth	Petaluma.
Wine press	Parre Brothers	San Francisco.
Centrifugal milk separator	G. G. Wickson & Co.	San Francisco.

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—PAINTING, ORNAMENTAL WORK, ETC.		
Collection of paintings	Miss Jessie Needham	Petaluma.
Collection of paintings	Mrs. J. S. Perry	Petaluma.
Collection of paintings	Miss Maria Brown	Petaluma.
Specimen of painting in oil on canvas	Mrs. J. S. Perry	Petaluma.
Portrait painting in oil	Miss Jessie Needham	Petaluma.
Portrait painting in oil	Miss Maria Brown	Petaluma.
Painting in water colors on wood, silk, paper, or plush	Miss Mamie Gilroy	Petaluma.
Landscape painting	Miss Jessie Needham	Petaluma.
Landscape painting	Mrs. J. S. Perry	Petaluma.
Flower painting	Miss Jessie Needham	Petaluma.
Flower painting	Mrs. J. S. Perry	Petaluma.
Animal painting	Mrs. J. S. Perry	Petaluma.
Animal painting	Miss Rose Brandon	Petaluma.
Porcelain painting	Miss A. E. Fairbanks	Petaluma.
Porcelain painting	Mrs. J. A. McNear	Petaluma.
Kensington painting	Mrs. C. F. Northrup	Petaluma.
Kensington painting	Miss Jessie Needham	Petaluma.
Kensington painting	Miss Abbie Vestal	Petaluma.
Collection of photographs	J. R. Piggot	Santa Rosa.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Collection of photographs	L. F. Shepherd	Petaluma.
Specimen of crayon drawing	Miss C. E. Bodwell	Lakeville.
Specimen of crayon drawing	Miss Sallie Jewell	Petaluma.
Specimen of crayon drawing	Miss W. Kuffle	Bloomfield.
Specimen of crayon drawing	Miss Alice J. Brown	Petaluma.
Specimen of sketching from nature	Mrs. W. A. Lewis	Petaluma.
Specimen of sketching from nature	Mrs. J. S. Perry	Petaluma.
Specimen of sketching from nature	Miss W. Kuffle	Bloomfield.
Florentine modeling	Miss Abbie Vestal	Petaluma.
Specimen of hair jewelry	Mrs. A. H. Patty	Petaluma.
Specimen of hair jewelry	Mrs. M. A. Mitchelle	Petaluma.
Wax flowers	Miss Abbie Vestal	Petaluma.
Specimen of shell work	Mrs. A. H. Patty	Petaluma.
Specimen of bead work	Mrs. C. T. Northrup	Petaluma.
Specimen of bead work	Mrs. A. H. Patty	Petaluma.
Stuffed birds and animals	J. B. Lewis	Petaluma.
Specimen of painting in oil on satin	Miss Jessie Needham	Petaluma.
Specimen of painting in oil on satin	Miss Rose Brandon	Petaluma.
Specimen of painting in oil on satin	Miss Abbie Vestal	Petaluma.
CLASS II—EMBROIDERY, NEEDLEWORK, SEWING, KNITTING, ETC.		
Specimens of needlework, not less than ten varieties	Miss P. L. Miranda	Petaluma.
Specimens of needlework, not less than ten varieties	Miss Mary Keenan	Lakeville.
Specimens of needlework, not less than ten varieties	Mrs. T. M. Carr	Petaluma.
Specimens of needlework, not less than ten varieties	Mrs. A. H. Patty	Petaluma.
Specimens of needlework, not less than ten varieties	Mrs. F. H. Atwater	Petaluma.
Exhibit of family sewing	Mrs. A. Dahlmann	Petaluma.
Silk embroidery on silk or velvet	Mrs. G. E. Fuller	Petaluma.
Silk embroidery on silk or velvet	Mrs. T. M. Carr	Petaluma.
Silk embroidery on silk or velvet	Mrs. C. F. Northrup	Petaluma.
Silk embroidery on silk or velvet	Mrs. F. B. Perry	Petaluma.
Worsted embroidery	Mrs. A. H. Patty	Petaluma.
Worsted embroidery	Mrs. F. H. Atwater	Petaluma.
Worsted embroidery	Miss F. P. Tate	Petaluma.
Cotton embroidery	Mrs. C. F. Northrup	Petaluma.
Cotton embroidery	Mrs. T. B. Perry	Petaluma.
Cotton embroidery	Mrs. F. H. Atwater	Petaluma.
Embroidery on lace	Mrs. F. B. Perry	Petaluma.
Embroidery on lace	Mrs. A. H. Patty	Petaluma.
Embroidery on lace	Mrs. N. K. French	Petaluma.
Embroidery on lace	Mrs. J. B. Tupper	Petaluma.
Point lace work	Mrs. T. M. Carr	Petaluma.
Etching	Miss P. L. Miranda	Petaluma.
Etching	Mrs. C. F. Northrup	Petaluma.
Etching	Mrs. T. M. Carr	Petaluma.
Etching	Mrs. F. B. Perry	Petaluma.
Etching	Mrs. S. C. Pierce	Petaluma.
Etching	Mrs. F. H. Atwater	Petaluma.
Etching	Miss Abbie Vestal	Petaluma.
Embroidered sofa cushion	Mrs. T. M. Carr	Petaluma.
Embroidered sofa cushion	Mrs. A. H. Patty	Petaluma.
Embroidered sofa cushion	Mrs. N. K. French	Petaluma.
Embroidered wall panel	Mrs. C. F. Northrup	Petaluma.
Kensington or satin stitch work in chenille	Mrs. T. M. Carr	Petaluma.
Kensington or satin stitch work in chenille	Mrs. F. H. Atwater	Petaluma.
Kensington work in crewel	Mrs. C. F. Northrup	Petaluma.
Kensington work in crewel	Mrs. T. M. Carr	Petaluma.
Kensington work in silk	Mrs. E. J. McCoy	Petaluma.
Kensington work in silk	Mrs. F. H. Atwater	Petaluma.
Crochet work in silk	Mrs. T. M. Carr	Petaluma.
Crochet work in silk	Mrs. A. H. Patty	Petaluma.
Crochet work in silk	Mrs. F. H. Atwater	Petaluma.
Crochet work in cotton	Mrs. W. Perry	Petaluma.
Crochet work in cotton	Mrs. J. C. Fyfe	Petaluma.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Crochet work in cotton	Mrs. T. M. Carr	Petaluma.
Crochet work in cotton	Mrs. A. H. Patty	Petaluma.
Crochet work in cotton	Miss Effie Houx	Petaluma.
Crochet work in cotton	Miss Hat'e Rodehaver	Petaluma.
Crochet work in cotton	Miss Nellie Freeman	Petaluma.
Portugese lace	Miss P. L. Miranda	Petaluma.
Portugese lace	Mrs. W. Perry	Petaluma.
Portugese lace	Mrs. F. B. Perry	Petaluma.
Spanish lace	Miss P. L. Miranda	Petaluma.
Spanish lace	Mrs. T. M. Carr	Petaluma.
Spanish lace	Mrs. A. H. Patty	Petaluma.
Spanish lace	Mrs. F. H. Atwater	Petaluma.
Transferred work	Mrs. G. E. Fuller	Petaluma.
Transferred work	Mrs. A. H. Patty	Petaluma.
Transferred work	Mrs. F. H. Atwater	Petaluma.
Crazy silk patchwork	Mrs. G. E. Fuller	Petaluma.
Crazy silk patchwork	Miss D. Fyfe	Petaluma.
Crazy silk patchwork	Miss N. L. Fyfe	Petaluma.
Crazy silk patchwork	Mrs. C. F. Northrup	Petaluma.
Crazy silk patchwork	Mrs. T. M. Carr	Petaluma.
Crazy silk patchwork	Mrs. F. Alkier	Petaluma.
Crazy silk patchwork	Mrs. I. Parker	Petaluma.
Crazy silk patchwork	Miss Abbie Vestal	Petaluma.
Lambrequin	Mrs. C. F. Northrup	Petaluma.
Lambrequin	Mrs. T. M. Carr	Petaluma.
Lambrequin	Miss Jessie Needham	Petaluma.
Lambrequin	Miss Abbie Vestal	Petaluma.
Arasene work	Miss Abbie Vestal	Petaluma.
Arasene work	Miss Nellie Freeman	Tomaes.
Arasene work	Mrs. F. H. Atwater	Petaluma.
Arasene work	Mrs. T. M. Carr	Petaluma.
Arasene work	Mrs. C. F. Northrup	Petaluma.
Arasene work	Mrs. E. J. McCoy	Petaluma.
Ribbon work	Mrs. C. F. Northrup	Petaluma.
Ribbon work	Mrs. F. H. Atwater	Petaluma.
Ribbon work	Miss Abbie Vestal	Petaluma.
Couching	Miss Abbie Vestal	Petaluma.
Couching	Mrs. F. H. Atwater	Petaluma.
Couching	Mrs. C. F. Northrup	Petaluma.
Couching	Mrs. G. E. Fuller	Petaluma.
Afghan	Mrs. G. C. Young	Petaluma.
Afghan	Miss Helen Munday	Petaluma.
Afghan	Mrs. J. R. Bogart	Petaluma.
Ottoman cover	Mrs. C. F. Northrup	Petaluma.
Ottoman cover	Miss Sallie Jewell	Petaluma.
Tatting	Mrs. T. M. Carr	Petaluma.
Crochet shawl	Miss P. L. Miranda	Petaluma.
Crochet shawl	Miss A. Dahlmann	Petaluma.
Crochet shawl	Miss Sallie Jewell	Petaluma.
Crochet shawl	Mrs. T. M. Carr	Petaluma.
Netting	Mrs. J. C. Fyfe	Petaluma.
Netting	Mrs. T. M. Carr	Petaluma.
Netting	Mrs. F. Tate	Petaluma.
Hand-knit underwear	Mrs. N. K. French	Petaluma.
Hand-knit underwear	Miss Effie Houx	Petaluma.
Hearth rug	Mrs. G. E. Fuller	Petaluma.
Hearth rug	Mrs. T. M. Carr	Petaluma.
Hearth rug	Mrs. S. C. Pierce	Petaluma.
Hearth rug	Miss L. Vestal	Petaluma.
Pair of stockings, woolen or cotton	Miss Josephine Perry	Petaluma.
Pair of stockings, woolen or cotton	Mrs. F. B. Perry	Petaluma.
Pair of stockings, woolen or cotton	Mrs. F. Tate	Petaluma.
Piece of fancy knitting	Mrs. A. H. Patty	Petaluma.
Piece of fancy knitting	Mrs. W. L. Buckius	Petaluma.
Piece of fancy knitting	Mrs. S. C. Pierce	Petaluma.
Piece of fancy knitting	Mrs. T. M. Carr	Petaluma.
Piece of fancy knitting	Miss Mary Keenan	Petaluma.
Piece of fancy knitting	Miss N. M. Lewis	Petaluma.
Knit quilt	Mrs. F. Tate	Petaluma.
Quilting	Mrs. Geo. E. Fuller	Petaluma.

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Quilting	Mrs. T. M. Carr	Petaluma.
Baby's dress	Mrs. T. M. Carr	Petaluma.
Gent's shirt	Mrs. A. H. Patty	Petaluma.
Gent's shirt	Miss Ellen Keenan	Petaluma.
Gent's shirt	Miss A. Dahlmann	Petaluma.
Piece of patchwork	Mrs. T. M. Carr	Petaluma.
Exhibit of millinery	Miss Lena Manzy	Petaluma.
Bonnet	Miss Lena Manzy	Petaluma.
Toilet set, not less than three pieces	Miss P. L. Miranda	Petaluma.
Toilet set, not less than three pieces	Miss A. Vestal	Petaluma.
Toilet set, not less than three pieces	Miss Ellen Keenan	Petaluma.
Toilet set, not less than three pieces	Mrs. F. H. Atwater	Petaluma.
Toilet set, not less than three pieces	Miss Jessie Needham	Petaluma.
Table scarf	Mrs. T. M. Carr	Petaluma.
Table scarf	Mrs. C. F. Northrup	Petaluma.
Table scarf	Mrs. F. H. Atwater	Petaluma.
Table scarf	Miss Abbie Vestal	Petaluma.

CLASS III—BREAD, CAKES, ETC.

Wheat bread	Miss I. Walker	Petaluma.
Wheat bread	Mrs. J. C. Diamond	Petaluma.
Wheat bread	Miss A. Dahlmann	Petaluma.
Wheat bread	Mrs. O. Elmore	Petaluma.
Wheat bread	Mrs. L. G. Nay	Petaluma.
Wheat bread	Mrs. D. M. Winans	Petaluma.
Boston brown bread	Isabel Walker	Petaluma.
Boston brown bread	Mrs. L. G. Nay	Petaluma.
Corn bread	Isabel Walker	Petaluma.
Corn bread	Miss A. Dahlmann	Petaluma.
Corn bread	Mrs. L. G. Nay	Petaluma.
Fruit cake	Isabel Walker	Petaluma.
Fruit cake	W. H. Van Marter	Petaluma.
Fruit cake	Miss A. Dahlmann	Petaluma.
Fruit cake	Mrs. A. H. Patty	Petaluma.
Fruit cake	Mrs. O. Elmore	Petaluma.
Fruit cake	Mrs. L. G. Nay	Petaluma.
Fruit cake	Mrs. J. Merritt	Petaluma.
Pound cake	W. H. Van Marter	Petaluma.
Pound cake	Mrs. J. C. Diamond	Petaluma.
Pound cake	Miss A. Dahlmann	Petaluma.
Pound cake	Mrs. A. H. Patty	Petaluma.
Pound cake	Mrs. L. G. Nay	Petaluma.
Sponge cake	Isabel Walker	Petaluma.
Sponge cake	W. H. Van Marter	Petaluma.
Sponge cake	Mrs. J. C. Diamond	Petaluma.
Sponge cake	Miss A. Dahlmann	Petaluma.
Sponge cake	Mrs. L. G. Nay	Petaluma.
Coffee cake	Mrs. J. C. Diamond	Petaluma.
Coffee cake	Mrs. L. G. Nay	Petaluma.
Assortment of tarts	Mrs. J. C. Diamond	Petaluma.
Assortment of tarts	Miss A. Dahlmann	Petaluma.

CLASS IV—PLANTS, BOUQUETS, ETC.

California trees, shrubs, and flowering plants ..	W. A. T. Stratton	Petaluma.
Hardy evergreens, trees, and shrubs for garden ..	W. A. T. Stratton	Petaluma.
Semi-tropic fruit trees in fruit	W. A. T. Stratton	Petaluma.
Flowering roses in pots	W. A. T. Stratton	Petaluma.
Miniature garden, with growing specimens	Daisy Show	Petaluma.
Fuchsias, not less than twenty-five specimens ..	W. A. T. Stratton	Petaluma.
Begonias, not less than twenty-five specimens ..	W. A. T. Stratton	Petaluma.
Floral design	Mrs. L. C. Hedges	Petaluma.
Cut flowers, not less than two hundred specimens ..	Mrs. L. C. Hedges	Petaluma.
Cut dahlias, not less than one hundred specimens ..	Mrs. L. C. Hedges	Petaluma.
Hanging baskets	W. A. T. Stratton	Petaluma.
Vase bouquets	Mrs. L. C. Hedges	Petaluma.
Vase bouquets	W. A. T. Stratton	Petaluma.
Vase bouquets	Mrs. C. D. Grover	Petaluma.
Exhibit of paper flowers	Mrs. E. J. McCoy	Petaluma.

CHILDREN'S DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
Exhibit of plain sewing.....	Lillian Lewis.....	Petaluma.
Exhibit of needlework, three pieces.....	Rose Miranda.....	Petaluma.
Exhibit of needlework, three pieces.....	H. Keenan.....	Lakeville.
Exhibit of needlework, three pieces.....	Josephine Perry.....	Petaluma.
Crochet work.....	May Fyfe.....	Petaluma.
Crochet work.....	Rue P. Tate.....	Sonoma.
Knitting.....	Josephine Perry.....	Petaluma.
Darning.....	Rue P. Tate.....	Sonoma.
Etching.....	Rose Miranda.....	Petaluma.
Pencil drawing.....	Maggie Weissband.....	Petaluma.
Specimen of penmanship.....	H. Campbell.....	Petaluma.
Wheat bread.....	Georgie Hamilton.....	Petaluma.
Wheat bread.....	Jennie Gibson.....	Petaluma.
Sponge cake.....	Georgie Hamilton.....	Petaluma.
Sponge cake.....	Abbie Waters.....	Petaluma.
Pound cake.....	Abbie Waters.....	Petaluma.
Fruit cake.....	Abbie Waters.....	Petaluma.
Fruit cake.....	Helen Munday.....	Petaluma.
Painting.....	Katie French.....	Petaluma.
Painting.....	Paul Sperry.....	Petaluma.
Largest variety of eggs.....	Marvin Hunt.....	Petaluma.
Largest variety of eggs.....	Mabel Lewis.....	Petaluma.

SWEEPSTAKES.

FREE FOR THE STATE.

Article Exhibited.	Exhibitor.	P. O. Address.
Exhibit of groceries.....	Killam & Stewart.....	Petaluma.
Exhibit of silverware.....	L. F. Ellsworth & Co.....	Petaluma.
Exhibit of shelf hardware.....	Bauer & Co.....	Petaluma.
Exhibit of agricultural implements.....	Bauer & Co.....	Petaluma.
Exhibit of pumps, stoves, and tinware.....	Kopf & Gross.....	Petaluma.
Exhibit of furniture.....	Ellsworth & Son.....	Petaluma.
Exhibit of pianos and organs.....	F. W. Spencer & Co.....	San Francisco.
Exhibit of glassware, crockery, and cutlery.....	F. H. Atwater.....	Petaluma.
Collection of paintings.....	Miss Jessie Needham.....	Petaluma.
Collection of paintings.....	Mrs. J. S. Perry.....	Petaluma.

COUNTY EXHIBITS.

Article Exhibited.	Exhibitor.	P. O. Address.
For best display.....	Pomona Grange.....	Santa Rosa.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBRED HORSES—STALLIONS.			
<i>Four Years Old and Over.</i>			
Harry Peyton	P. Carroll	Bloomfield	\$15 00
Ironstone	P. Carroll	Bloomfield	\$9 00
<i>Two Years Old.</i>			
Ito	P. Carroll	Bloomfield	\$4 50
<i>One Year Old.</i>			
Inkerman	P. Carroll	Bloomfield	\$6 00
<i>Under One Year.</i>			
Idle Boy	P. Carroll	Bloomfield	\$3 00
MARES.			
<i>Four Years Old and Over.</i>			
Nellie	P. Carroll	Bloomfield	\$10 00
<i>Three Years Old.</i>			
Alice T.	J. McM. Shafter ..	San Francisco ..	\$8 00
Mollie	P. Carroll	Bloomfield	\$4 00
<i>One Year Old.</i>			
Icardy	P. Carroll	Bloomfield	\$4 00
CLASS II—STANDARD TROTTERS—STALLIONS.			
<i>Four Years Old and Over.</i>			
Polo	Wilfred Page	Penn's Grove	\$15 00
General McClellan, Jr.	J. R. Rose	Lakeville	\$7 50
<i>Three Years Old.</i>			
Mortimer	Wilfred Page	Penn's Grove	\$12 00
Free Willie	F. W. Loeber	St. Helena	\$9 00
<i>Two Years Old.</i>			
McGregor	J. & W. S. Fritsch ..	Petaluma	\$4 50
<i>One Year Old.</i>			
Electric	Wilfred Page	Penn's Grove	\$6 00
MARES.			
<i>Four Years Old and Over.</i>			
Debonair	S. Sperry	Petaluma	\$10 00
Frances Allen	George A. Allen ..	Petaluma	\$5 00
<i>Two Years Old.</i>			
Silkey	I. M. Proctor	Petaluma	\$6 00
<i>One Year Old.</i>			
Secreta	Wilfred Page	Penn's Grove	\$4 00
CLASS III—ROADSTERS—STALLIONS.			
<i>Three Years Old.</i>			
Rustic Boy	P. J. Shafter	Olema	\$12 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
MARES.			
<i>Four Years Old and Over.</i>			
Reka Patchen	W. Page	Penn's Grove	\$10 00
<i>Three Years Old.</i>			
Patti Patchen	W. Page	Penn's Grove	\$8 00
<i>One Year Old.</i>			
Alice Mc	G. McDonald	Novato	\$4 00
CLASS V—NORMANS AND OTHER FRENCH DRAFT HORSES—STALLIONS.			
<i>Four Years Old and Over.</i>			
Ernest Parroll	Theo. Skillman	Petaluma	\$15 00
Trumpette	Sonoma Stock Breeder's Ass'n.	Petaluma	\$7 50
<i>Three Years Old.</i>			
Paradise	Theo. Skillman	Petaluma	\$12 00
<i>Two Years Old.</i>			
Duke of Marin	L. A. Devota	Novato	\$9 00
<i>One Year Old.</i>			
De Chartres	L. A. Devota	Novato	\$6 00
MARES.			
<i>Four Years Old and Over.</i>			
Queen of the Valley	P. Hennelly	Petaluma	\$10 00
Annie	Wm. Hill	Petaluma	\$5 00
<i>One Year Old.</i>			
Bessie	Wm. Hill	Petaluma	\$4 00
STALLIONS SHOWING BEST FIVE COLTS.			
Beaufort and family	J. P. Rodehaver	Petaluma	\$20 00
CLASS VI—CLYDESDALE AND OTHER EN- GLISH DRAFT HORSES—STALLIONS.			
<i>Four Years Old and Over.</i>			
Morning Star	Clydesdale Horse Co.	Petaluma	\$15 00
Pride of the West	Sol. Gilmore	Petaluma	\$7 50
<i>Three Years Old.</i>			
Premier	W. Page	Penn's Grove	\$12 00
<i>Two Years Old.</i>			
Pointsman, Jr.	F. Roberts	Petaluma	\$9 00
Sol Gilmore	Clydesdale Horse Co.	Petaluma	\$4 50
<i>One Year Old.</i>			
Pointsman, 2d.	L. A. Hardin	Petaluma	\$6 00
<i>Under One Year.</i>	J. A. McNear	Petaluma	R. R.
Pointsman, Jr.	Denman & McNear	Petaluma	\$3 00
Burns	R. H. Crane	Santa Rosa	R. R.
MARES.			
<i>Four Years Old and Over.</i>			
Maid of the Mist	Denman & McNear	Petaluma	\$10 00
Blossom	Denman & McNear	Petaluma	\$5 00

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
<i>Three Years Old.</i>			
Dora	W. Page	Penn's Grove	\$8 00
<i>Two Years Old.</i>			
Annie	R. H. Crane	Santa Rosa	\$6 00
Freckle	W. Page	Penn's Grove	\$3 00
<i>One Year Old.</i>			
Belle	Denman & McNear	Petaluma	\$1 00
Nellie Pointsman	P. Hennelly	Petaluma	R. R.
<i>Under One Year.</i>			
.....	P. Hennelly	Petaluma	\$3 00
CLASS VII—GENERAL PURPOSES—STALLIONS.			
<i>Three Years Old.</i>			
Royal Studley	Seth Cook	Contra Costa	\$12 00
Whippleton, Jr.	John Poplin	St. Helena	\$6 00
<i>Two Years Old.</i>			
Bob	R. Crane	Petaluma	\$8 00
<i>One Year Old.</i>			
Tom Paine	G. McDonald	Novato	B. R.
<i>Under One Year.</i>			
Grover Cleveland	J. Purrington	Sebastopol	B. R.
Star	J. Purrington	Sebastopol	R. R.
MARES.			
<i>Three Years Old.</i>			
Kate	L. A. Hardin	Petaluma	\$10 00
.....	Frank Roberts	Petaluma	\$5 00
<i>One Year Old.</i>			
Mollie	J. Purrington	Sebastopol	B. R.
<i>Under One Year.</i>			
Carrie D.	R. Crane	Petaluma	R. R.
Sallie Walker	J. Purrington	Sebastopol	B. R.
STALLION SHOWING BEST FIVE COLTS.			
Alexander 2d and family	J. Purrington	Sebastopol	\$15 00
CLASS VIII—CARRIAGE, SADDLE, AND GENTLEMEN'S ROADSTERS.			
<i>Carriage Team shown to Harness.</i>			
Normans	Wm. Bihler	Lakeville	\$10 00
.....	John Carter	Tomales	\$5 00
<i>Saddle Mare or Gelding.</i>			
Bay Johnnie	F. Roberts	Petaluma	\$5 00
Lenora	F. Wickersham	Petaluma	\$2 50
<i>Pair of Mares or Geldings to Pole.</i>			
Kate and Mollie	J. Yates	Petaluma	\$10 00
Maud and Minnie	J. R. Rose	Lakeville	\$5 00
<i>Single Mares or Geldings to Buggy.</i>			
Josephine	J. R. Rose	Lakeville	\$5 00
Phœbe	J. B. Hinkle	Petaluma	\$2 50
CLASS IX—JACKS, JENNIES, AND MULES—JACK.			
<i>Three Years Old and Over.</i>			
Black Night	J. A. Box	Glen Ellen	\$10 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
JENNY.			
<i>Three Years Old and Over.</i>			
Jennie.....	P. Laulor.....	Petaluma.....	\$8 00
CLASS X—SHORTHORNS—BULLS.			
<i>Four Years Old and Over.</i>			
Royal Duke.....	W. Page.....	Penn's Grove.....	\$15 00
.....	J. R. Jewell.....	Petaluma.....	\$7 50
<i>Three Years Old.</i>			
Sonoma 2d.....	W. Page.....	Penn's Grove.....	\$12 00
<i>Two Years Old.</i>			
Mugwump.....	W. Page.....	Penn's Grove.....	\$9 00
Sharon Bell Duke.....	M. D. Hopkins.....	Petaluma.....	\$4 50
<i>One Year Old.</i>			
Takes the Cake.....	W. Page.....	Penn's Grove.....	\$6 00
Patsy Carroll.....	W. Page.....	Penn's Grove.....	R. R.
<i>Under One Year.</i>			
Little Pet, Jr.....	John Lynch.....	Petaluma.....	\$3 00
Boom.....	W. Page.....	Penn's Grove.....	R. R.
COWS.			
<i>Four Years Old and Over.</i>			
Maita.....	W. Page.....	Penn's Grove.....	\$10 00
Belle Sonoma.....	W. Page.....	Penn's Grove.....	\$5 00
<i>Three Years Old.</i>			
Peerless Rose.....	W. Page.....	Penn's Grove.....	\$8 00
<i>Two Years Old.</i>			
Belle Sonoma 2d.....	W. Page.....	Penn's Grove.....	\$6 00
Carolina.....	W. Page.....	Penn's Grove.....	\$3 00
<i>One Year Old.</i>			
Belle of the Mead.....	W. Page.....	Penn's Grove.....	\$4 00
Mollie Maid.....	W. Page.....	Penn's Grove.....	R. R.
<i>Under One Year.</i>			
Goldnut.....	W. Page.....	Penn's Grove.....	\$3 00
Belle Cheesett.....	W. Page.....	Penn's Grove.....	R. R.
CLASS XI—SHORTHORN HERD AND SWEEP-STAKES.			
<i>Family.</i>			
Royal Duke and family.....	W. Page.....	Penn's Grove.....	\$20 00
<i>Bull of any Age.</i>			
Mugwump.....	W. Page.....	Penn's Grove.....	\$10 00
Sonoma 2d.....	W. Page.....	Penn's Grove.....	R. R.
<i>Cow of any Age.</i>			
Belle Sonoma.....	W. Page.....	Penn's Grove.....	\$5 00
Belle Medico.....	W. Page.....	Penn's Grove.....	R. R.
CLASS XIV—POLLED ANGUS—BULLS.			
<i>Four Years Old and Over.</i>			
Marathon of Fintry.....	Seth Cook.....	Contra Costa.....	\$15 00
<i>Three Years Old.</i>			
Admiral.....	Seth Cook.....	Contra Costa.....	\$12 00
<i>Under One Year.</i>			
Vigilant.....	Seth Cook.....	Contra Costa.....	\$3 00

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
COWS.			
<i>Four Years Old and Over.</i>			
Violet 2d of Blair Shanwell.....	Seth Cook.....	Contra Costa.....	\$10 00
<i>Three Years Old.</i>			
Barthey's Lass.....	Seth Cook.....	Contra Costa.....	\$8 00
Rosella.....	Seth Cook.....	Contra Costa.....	\$4 00
<i>Two Years Old.</i>			
Jessamine.....	Seth Cook.....	Contra Costa.....	\$6 00
Languid.....	Seth Cook.....	Contra Costa.....	\$3 00
<i>One Year Old.</i>			
Princess Lydia.....	Seth Cook.....	Contra Costa.....	\$4 00
<i>Under One Year.</i>			
Bannerette.....	Seth Cook.....	Contra Costa.....	\$3 00
CLASS XV—POLLED ANGUS HERD AND SWEEPSTAKES.			
<i>Family.</i>			
Marathon of Fintry and family.....	Seth Cook.....	Contra Costa.....	\$20 00
CLASS XVIII—HOLSTEINS—BULLS.			
<i>Two Years Old.</i>			
Oro Blanco.....	J. H. White.....	Lakeville.....	\$9 00
Leicester.....	J. H. White.....	Lakeville.....	\$4 50
<i>One Year Old</i>			
Laurin.....	J. H. White.....	Lakeville.....	\$6 00
Diamond Dick.....	Ed. Steiger.....	Sonoma.....	R. R.
<i>Under One Year.</i>			
Mateo.....	J. H. White.....	Lakeville.....	\$3 00
Somitas.....	J. H. White.....	Lakeville.....	R. R.
COWS.			
<i>Four Years Old and Over.</i>			
Anemie.....	J. H. White.....	Lakeville.....	\$10 00
Dagotine.....	J. H. White.....	Lakeville.....	\$5 00
<i>Three Years Old.</i>			
Wayward.....	J. H. White.....	Lakeville.....	\$8 00
Annot Lyle.....	J. H. White.....	Lakeville.....	\$4 00
<i>Two Years Old.</i>			
Ocala.....	J. H. White.....	Lakeville.....	\$6 00
Lupine.....	J. H. White.....	Lakeville.....	\$3 00
<i>One Year Old.</i>			
Sierra.....	J. H. White.....	Lakeville.....	\$4 00
Lasquite.....	J. H. White.....	Lakeville.....	R. R.
<i>Under One Year.</i>			
Bumblebee.....	J. H. White.....	Lakeville.....	\$3 00
Chiquita.....	J. H. White.....	Lakeville.....	R. R.
CLASS XIX—HOLSTEIN HERD AND SWEEPSTAKES.			
<i>Families.</i>			
Oro Blanco and family.....	J. H. White.....	Lakeville.....	\$20 00
Leicester and family.....	J. H. White.....	Lakeville.....	\$5 00
<i>Bull of any Age.</i>			
Oro Blanco.....	J. H. White.....	Lakeville.....	\$10 00
Leicester.....	J. H. White.....	Lakeville.....	R. R.

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
<i>Cow of any Age.</i>			
Anemie	J. H. White	Lakeville	\$5 00
Winfridalla	J. H. White	Lakeville	R. R.
CLASS XX—JERSEYS AND GUERNSEYS—BULLS.			
<i>Four Years Old and Over.</i>			
Olimpo	Roy Bros.	Olema	\$15 00
Favorite	Bliss Estate	Petaluma	\$7 50
<i>Three Years Old.</i>			
Nantasket	Bliss Estate	Petaluma	\$12 00
<i>Two Years Old.</i>			
Wildwood	Hall Bros.	Petaluma	\$9 00
Tarsus of Scituate	P. Laulor	Petaluma	\$4 50
<i>One Year Old.</i>			
Romulus of Marin	Roy Bros.	Olema	\$6 00
<i>Under One Year.</i>			
Boom	H. P. Brainerd ..	Petaluma	\$3 00
COWS.			
<i>Four Years Old and Over.</i>			
Moorish Maid	Roy Bros.	Olema	\$10 00
<i>Two Years Old.</i>			
Jaunito 2d	Bliss Estate	Petaluma	\$6 00
<i>One Year Old.</i>			
Maggie	H. P. Brainerd ..	Petaluma	\$4 00
CLASS XXII—AYRSHIRES—BULLS.			
<i>Two Years Old.</i>			
Ethelbert	G. Bement & Son ..	Redwood City ..	\$9 00
<i>One Year Old.</i>			
Lord Faxion	G. Bement & Son ..	Redwood City ..	\$6 00
<i>Under One Year.</i>			
Red Mikado	G. Bement & Son ..	Redwood City ..	\$3 00
Hotspur	G. Bement & Son ..	Redwood City ..	R. R.
COWS.			
<i>Four Years Old and Over.</i>			
Elaine	G. Bement & Son ..	Redwood City ..	\$10 00
Marian	G. Bement & Son ..	Redwood City ..	\$5 00
<i>Three Years Old.</i>			
Sybilla	G. Bement & Son ..	Redwood City ..	\$8 00
<i>Two Years Old.</i>			
Sylph	G. Bement & Son ..	Redwood City ..	\$6 00
<i>One Year Old.</i>			
Ethelbert	G. Bement & Son ..	Redwood City ..	\$4 00
<i>Under One Year.</i>			
Faxionia	G. Bement & Son ..	Redwood City ..	\$3 00
CLASS XXIII—AYRSHIRES, HERD AND SWEEP-STAKES.			
<i>Families.</i>			
Ethelbert and family	G. Bement & Son ..	Redwood City ..	\$20 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
<i>Bull of any Age.</i>			
Lord Faxion	Geo. Bement & Son	Redwood City	\$10 00
Ethelbert	Geo. Bement & Son	Redwood City	R. R.
<i>Cow of any Age.</i>			
Sybilla	Geo. Bement & Son	Redwood City	\$5 00
Elaine	Geo. Bement & Son	Redwood City	R. R.
CLASS XXV—GRADED CATTLE—COWS.			
<i>Three Years Old and Over.</i>			
Aint She a Daisy	W. Page	Penn's Grove	\$10 00
<i>Two Years Old.</i>			
Squeeze Me Bag	W. Page	Penn's Grove	\$7 50
<i>One Year Old.</i>			
Belle of Tarweed	W. Page	Penn's Grove	\$5 00
<i>Under One Year.</i>			
Ustane	Bliss Estate	Petaluma	\$2 50
CLASS XXVI—SPANISH MERINOES—SHEEP AND FLEECES.			
Best ram two years old and over	J. Laulor	Petaluma	\$6 00
Best three ewes two years old and over	J. Laulor	Petaluma	\$5 00
Best three ewes one year old	J. Laulor	Petaluma	\$4 00
Best three ewe lambs under one year	J. Laulor	Petaluma	\$2 00
CLASS XXIX—SOUTH SHROPSHIRE, OXFORD, AND HAMPSHIRE DOWNS.			
Best ram two years old and over	R. H. Crane	Santa Rosa	\$6 00
Second best ram two years old and over	Geo. Bement & Son	Redwood City	\$3 00
Best ram one year old	R. H. Crane	Santa Rosa	\$5 00
Best three ram lambs under one year	R. H. Crane	Santa Rosa	\$4 00
Best three ewes two years old and over	R. H. Crane	Santa Rosa	\$5 00
Second best three ewes two years old and over	Geo. Bement & Son	Redwood City	\$2 50
Best three ewes one year old	R. H. Crane	Santa Rosa	\$4 00
Best three ewe lambs under one year	R. H. Crane	Santa Rosa	\$2 00
CLASS XXX—GRADED FLEECES.			
Five fleeces combing wool	Pomona Grange ..	Santa Rosa	\$1 00
CLASS XXXII—SWINE—POLAND-CHINA.			
Best boar one year old and over	R. H. Crane	Santa Rosa	\$6 00
Best boar six months old	R. H. Crane	Santa Rosa	\$3 00
Best sow one year old and over	R. H. Crane	Santa Rosa	\$5 00
Best sow and five pigs	R. H. Crane	Santa Rosa	\$6 00
CLASS XXXIV—PURE BRED POULTRY.			
Best pair Light Brahma fowls	J. L. Winans	Petaluma	\$2 00
Second best pair Light Brahma fowls	W. D. Freeman	Tomales	R. R.
Best pair Light Brahma chicks	J. L. Winans	Petaluma	\$1 00
Second best pair Light Brahma chicks	Mrs. Wm. Hill	Petaluma	R. R.
Best pair Buff Cochins fowls	Mrs. Wm. Hill	Petaluma	\$2 00
Second best pair Buff Cochins fowls	P. A. Meadows	Petaluma	R. R.
Best pair Buff Cochins chicks	P. A. Meadows	Petaluma	\$1 00
Best pair Plymouth Rock fowls	S. H. Church	Petaluma	\$2 00
Second best pair Plymouth Rock fowls	I. Blackburn	Petaluma	R. R.
Best pair Plymouth Rock chicks	I. Blackburn	Petaluma	\$1 00
Second best pair Plymouth Rock chicks	Isabella Walker	Petaluma	
Best pair Wyandotte chicks	J. Blackburn	Petaluma	
Second best pair Wyandotte chicks	Isabella Walker	Petaluma	
Best pair Dominique chicks	Isabella Walker	Petaluma	
Best pair Black Spanish fowls	S. H. Church	Petaluma	
Best pair Black Spanish chicks	Isabella Walker	Petaluma	
Best pair White Leghorn chicks	Isabella Walker	Petaluma	
Best pair Brown Leghorn fowls	S. H. Church	Petaluma	
Second best pair Brown Leghorn fowls	W. D. Freeman	Tomales	

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Best pair Brown Leghorn chicks	S. H. Church	Petaluma .....	.....
Best pair Black Leghorn fowls	W. D. Freeman	Tomales .....	.....
Best pair Silver-Spangled Hamburg fowls	S. H. Church	Petaluma .....	.....
Best pair Silver-Spangled Hamb'g chicks	Isabella Walker	Petaluma .....	.....
Second best pair Silver-Spangled Ham- burg chicks	S. H. Church	Petaluma .....	.....
Best pair Houdan fowls	W. D. Freeman	Tomales .....	.....
Best pair Brown-Red Game fowls	O. Elmore	Petaluma .....	.....
Best pair Brown-Red Game chicks	O. Elmore	Petaluma .....	.....
Best pair Duck-Winged fowls	O. Elmore	Petaluma .....	.....
Best pair Black-Breasted Game fowls	O. Elmore	Petaluma .....	.....
Second best pair Black-Breasted Game fowls	P. Mullally	Bloomfield .....	.....
Best pair Black-Breasted Game chicks	O. Elmore	Petaluma .....	.....
Second best pair Black-Breasted Game chicks	P. Mullally	Bloomfield .....	.....
Best pair Bantam fowls	Isabella Walker	Petaluma .....	.....
Second best pair Bantam fowls	Mrs. A. H. Patty	Petaluma .....	.....
Best pair Toulouse geese	R. H. Crane	Santa Rosa .....	.....
Second best pair Toulouse geese	O. Elmore	Petaluma .....	.....

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—AGRICULTURAL PRODUCTS.			
Best sack Australian wheat	W. D. Freeman	Tomales	\$2 00
Best sack barley	R. Crane	Petaluma	\$2 00
Best sack oats	W. D. Freeman	Tomales	\$2 00
Best sheaf wheat, any variety	C. D. Grover	Petaluma	\$2 00
Best sheaf barley	A. L. Wiswell	Petaluma	\$1 00
Best sheaf oats	W. D. Freeman	Tomales	\$1 00
Best sack wheat flour	Percival Milli'g Co.	Petaluma	Diploma.
Best sack buckwheat flour	Percival Milli'g Co.	Petaluma	Diploma.
Best sack shelled corn	R. Crane	Petaluma	\$2 00
Best collection potatoes, five varieties	P. Mullally	Bloomfield	\$5 00
Best single variety potatoes	P. Mullally	Bloomfield	\$2 00
Best exhibit onions	L. Vestal	Petaluma	\$2 00
Best exhibit squashes	R. Andrews	Petaluma	\$2 00
Best exhibit pumpkins	D. M. Winans	Petaluma	\$1 00
Best exhibit peas	Jas. Bloom	Petaluma	\$1 00
Best exhibit beans	Jas. Bloom	Petaluma	\$2 00
Best exhibit sugar beets	C. S. Gibson	Petaluma	\$1 00
Best exhibit mangel-wurzel beets	T. C. Putnam	Petaluma	\$1 00
Best six blood beets	C. S. Gibson	Petaluma	\$1 00
Best exhibit rutabagas	Jas. Bloom	Petaluma	\$1 00
Best exhibit turnips	Jas. Bloom	Petaluma	\$1 00
Best exhibit corn on stalk	R. H. Crane	Petaluma	\$1 00
Best exhibit cabbages	A. Weissband	Petaluma	\$1 00
Best exhibit watermelons	E. L. Charles	Petaluma	\$1 00
Best exhibit muskmelons	E. L. Charles	Petaluma	\$1 00
Best exhibit cantaloupes	C. S. Gibson	Petaluma	\$1 00
Best exhibit carrots	A. Weissband	Petaluma	\$1 00
Best exhibit pieplants	R. Andrews	Petaluma	\$1 00
Best display of product raised by one person on one farm	C. S. Gibson	Petaluma	\$10 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II—FRUITS, GRAPES, NUTS, ETC.			
Largest and best display of fruits raised in one orchard	I. Parker	Sebastopol	\$25 00
Second largest and best display of fruits raised in one orchard	John Merritt	Petaluma	\$10 00
Best exhibit of apples	John Merritt	Petaluma	\$10 00
Best single variety of six apples	John Merritt	Petaluma	\$2 00
Best six varieties of apples	John Merritt	Petaluma	\$3 00
Best collection of pears	I. Parker	Sebastopol	\$5 00
Best single variety of six pears	Mrs. W. H. Pepper	Petaluma	\$2 00
Best six varieties of pears	R. Andrews	Petaluma	\$3 00
Best exhibit of peaches	I. Parker	Sebastopol	\$2 00
Best exhibit of plums	F. F. Ennis	Petaluma	\$2 00
Best six quinces	C. Weightman	Sebastopol	\$2 00
Best collection of oranges	Mrs. W. H. Pepper	Petaluma	\$3 00
Best collection of lemons	Mrs. W. H. Pepper	Petaluma	\$3 00
Largest and best collection of grapes	Morris Bros.	Sonoma	\$20 00
Best collection of grapes raised in one vineyard	Morris Bros.	Sonoma	\$10 00
Best exhibit of foreign grapes	Morris Bros.	Sonoma	\$5 00
Best exhibit of California grapes	Morris Bros.	Sonoma	\$3 00
Largest bunch of grapes	Morris Bros.	Sonoma	\$2 00
Best collection of figs	Morris Bros.	Sonoma	\$2 00
Best collection of English walnuts	C. Weightman	Sebastopol	\$2 00
CLASS III—PRESERVED FRUITS, ETC.			
Best exhibit of kiln-dried fruits	C. Weightman	Sebastopol	\$5 00
Best exhibit of sun-dried fruits	A. H. Cassidy	Petaluma	\$5 00
Best exhibit of kiln-dried apples	F. F. Ennis	Petaluma	\$2 00
Best exhibit of sun-dried apples	C. Weightman	Sebastopol	\$2 00
Best exhibit of kiln-dried peaches	C. Weightman	Sebastopol	\$2 00
Best exhibit of sun-dried peaches	A. H. Cassidy	Petaluma	\$2 00
Best exhibit of kiln-dried plums	C. Weightman	Sebastopol	\$2 00
Best exhibit of sun-dried plums	A. H. Cassidy	Petaluma	\$2 00
Best exhibit of dried plums, seeded	A. H. Cassidy	Petaluma	\$2 00
Best exhibit of raisins	C. Weightman	Sebastopol	\$5 00
Best exhibit of domestic canned fruits	Mrs. J. C. Diamond	Petaluma	\$5 00
Best exhibit of jellies	Mrs. J. C. Diamond	Petaluma	\$4 00
Best exhibit of preserves	Mrs. J. C. Diamond	Petaluma	\$3 00
Best exhibit of pickles	Mrs. A. H. Patty	Petaluma	\$2 00
Best exhibit of catsup	W. H. Van Marter	Petaluma	\$1 50
Best exhibit of canned fruits	Petaluma Fruit Packing Co.	Petaluma	Diploma.
CLASS IV—BUTTER, CHEESE, AND BACON.			
<i>Special premium for butter by George R. McNear.</i>			
Best ten pound roll fresh butter	D. S. Dickson	Petaluma	\$25 00
Second best ten pound roll fresh butter	W. Page	Penn's Grove	\$10 00
Best exhibit of cheese	E. P. Nisson	Petaluma	\$5 00
Best exhibit of hams	R. Crane	Santa Rosa	\$2 00
Best exhibit of bacon	R. Crane	Santa Rosa	\$2 00
CLASS V—WINES, CIDER, ALE, ETC.			
Best exhibit of wines	Col. G. F. Hooper	Sonoma	\$20 00
Best exhibit of red wine	Col. G. F. Hooper	Sonoma	\$4 00
Best exhibit of white wine	Col. G. F. Hooper	Sonoma	\$4 00
Best exhibit of blackberry wine	Mrs. A. H. Patty	Petaluma	\$4 00
Best exhibit of brandy	Col. G. F. Hooper	Sonoma	\$1 00
Best exhibit of blackberry brandy	Mrs. A. H. Patty	Petaluma	\$2 00
Best exhibit of blackberry cordial	Mrs. A. H. Patty	Petaluma	\$2 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—MISCELLANEOUS.			
Best exhibit of furniture	Ellsworth & Son	Petaluma	\$10 00
Best exhibit of upholstery	Ellsworth & Son	Petaluma	\$7 50
Best exhibit of iron castings	W. H. Worth	Petaluma	\$2 00
Best exhibit of boots	Breeze & Broad	Petaluma	\$3 00
Best exhibit of woolen yarn	Torr & Newburgh	Petaluma	\$2 00
Best exhibit of blankets	Torr & Newburgh	Petaluma	\$3 00
Best exhibit of bookbinding	J. A. Cowen	Petaluma	Diploma and \$2 00
Best exhibit of brooms	A. Doty	Petaluma	\$2 00
Best model gate	L. J. Johnson	Petaluma	\$3 00
Best exhibit of tailoring	Mrs. A. H. Patty	Petaluma	\$5 00
Best exhibit of tinware	Kopf & Gross	Petaluma	\$5 00
Best sign and ornamental painting	Ellsworth & Son	Petaluma	\$3 00
Best marble work	W. S. Brown	Petaluma	Diploma and \$5 00
Best specimen of stone cutting	W. S. Brown	Petaluma	\$4 00
Best chairs	Ellsworth & Son	Petaluma	\$3 00
Best mechanical skill by an apprentice	W. R. Inguerson	Petaluma	\$2 00
CLASS II—CARRIAGES, BUGGIES, AND WAGONS.			
Best exhibit of carriages, buggies, and wagons	W. Zartman & Co.	Petaluma	\$10 00
Best top buggy	W. Zartman & Co.	Petaluma	\$8 00
Best breaking cart	W. Zartman & Co.	Petaluma	\$4 00
Best two-wheeled vehicle	E. Hopes	Petaluma	\$5 00
Best spring wagon	E. Hopes	Petaluma	\$8 00
Best carriage painting	H. Pimm	Petaluma	\$8 00
Best carriage trimming	Ellsworth & North- rup	Petaluma	\$8 00
CLASS III—SADDLERY AND HARNESS.			
Best exhibit of harness	Ellsworth & North- rup	Petaluma	\$15 00
Second best exhibit of harness	Gus Walsh	Petaluma	\$7 50
Best set of double harness	Ellsworth & North- rup	Petaluma	\$7 00
Best single harness	Ellsworth & North- rup	Petaluma	\$5 00
Best saddle	Ellsworth & North- rup	Petaluma	\$4 00
CLASS IV—AGRICULTURAL IMPLEMENTS.			
Best centrifugal milk separator	G. G. Wickson & Co.	San Francisco	\$25 00
Best wine press	W. H. Worth	Petaluma	Diploma and \$5 00
Best incubator	L. C. Byce	Petaluma	Diploma.

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—PAINTINGS, ORNAMENTAL WORK, ETC.			
Best collection of paintings	Miss J. Needham	Petaluma	\$10 00
Best special painting in oil on canvas	Mrs. J. S. Perry	Petaluma	\$5 00
Best special painting in oil on satin	Miss R. Brandon	Petaluma	\$5 00
Best portrait painting in oil	Miss M. C. Brown	Petaluma	\$5 00
Best painting in water color on wood, silk, paper, or plush	Miss M. Gilroy	Lakeville	\$3 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best landscape painting	Mrs. J. S. Perry ..	Petaluma	\$5 00
Best floral painting	Mrs. J. S. Perry ..	Petaluma	\$5 00
Best animal painting	Mrs. J. S. Perry ..	Petaluma	\$2 50
Best porcelain painting	Mrs. J. A. McNear ..	Petaluma	\$3 00
Best kensington painting	Miss Abbie Vestal ..	Petaluma	\$2 50
Best collection of photographs	J. R. Piggot	Santa Rosa	\$5 00
Best specimen of crayon drawing	Miss A. J. Brown ..	Petaluma	\$2 00
Best specimen of sketching from nature	Miss W. Kuffle	Petaluma	\$3 00
Best florentine modeling	Miss Abbie Vestal ..	Petaluma	\$2 00
Best specimen of hair jewelry	Mrs. A. H. Patty ..	Petaluma	\$2 00
Best wax flowers	Miss Abbie Vestal ..	Petaluma	\$3 00
Best specimen of shell work	Mrs. A. H. Patty ..	Petaluma	\$2 00
Best specimen of bead work	Mrs. A. H. Patty ..	Petaluma	\$2 00
Best stuffed birds and animals	J. B. Lewis	Petaluma	\$2 50
CLASS II—EMBROIDERY, NEEDLEWORK, SEW- ING, KNITTING, ETC.			
Best needlework, not less than ten varie- ties	Mrs. C. F. Northrup ..	Petaluma	\$20 00
Best family machine sewing	Miss A. Dahlmann ..	Petaluma	\$3 00
Best silk embroidery	Mrs. B. F. Perry ..	Petaluma	\$3 00
Best worsted embroidery	Mrs. Frank Tate ..	Sonoma	\$2 50
Best cotton embroidery	Mrs. B. F. Perry ..	Petaluma	\$2 00
Best embroidery on lace	Mrs. J. B. Tupper ..	Petaluma	\$2 00
Best point lace	Mrs. T. M. Carr ..	Petaluma	\$2 00
Best embroidered sofa cushion	Mrs. C. F. Northrup ..	Petaluma	\$2 00
Best etching	Mrs. S. C. Pierce ..	Petaluma	\$2 00
Best embroidered wall panel	Mrs. C. F. Northrup ..	Petaluma	\$2 00
Best kensington or satin stitch work in chenille	Mrs. F. H. Atwater ..	Petaluma	\$2 00
Best kensington work in crewel	Mrs. C. F. Northrup ..	Petaluma	\$2 00
Best kensington work in silk	Mrs. E. J. McCoy ..	Petaluma	\$2 00
Best crochet work	Mrs. F. H. Atwater ..	Petaluma	\$2 00
Best crochet work in cotton	Miss H. Rodehaver ..	Petaluma	\$2 00
Best Portuguese lace	Miss P. L. Miranda ..	Petaluma	\$2 00
Best Spanish lace	Miss P. L. Miranda ..	Petaluma	\$2 00
Best transferred work	Mrs. A. H. Patty ..	Petaluma	\$2 00
Best crazy silk patchwork	Mrs. G. E. Fuller ..	Petaluma	\$2 00
Best lambrequin	Miss Abbie Vestal ..	Petaluma	\$5 00
Best arasene work	Mrs. F. H. Atwater ..	Petaluma	\$2 00
Best ribbon work	Mrs. F. H. Atwater ..	Petaluma	\$2 00
Best couching	Mrs. C. F. Northrup ..	Petaluma	\$2 00
Best afghan	Mrs. G. C. Young ..	Petaluma	\$2 00
Best toilet set	Mrs. F. H. Atwater ..	Petaluma	\$2 00
Best ottoman cover	Miss Sallie Jewell ..	Petaluma	\$2 00
Best crochet shawl	Miss Sallie Jewell ..	Petaluma	\$2 00
Best netting	Mrs. J. C. Fyfe ..	Petaluma	\$2 00
Best tatting	Mrs. T. M. Carr ..	Petaluma	\$1 00
Best hand knit underwear	Miss Effie Houx ..	Petaluma	\$2 00
Best hearth rug	Mrs. L. Vestal ..	Petaluma	\$2 00
Best pair of stockings	Mrs. F. B. Perry ..	Petaluma	\$2 00
Best table scarf	Mrs. T. M. Carr ..	Petaluma	\$2 00
Best fancy knitting	Miss N. Lewis ..	Petaluma	\$2 00
Best knit quilt	Mrs. Frank Tate ..	Sonoma	\$2 00
Best quilting	Mrs. T. M. Carr ..	Petaluma	\$2 00
Best baby's dress	Mrs. T. M. Carr ..	Petaluma	\$2 50
Best gent's shirt	Miss A. Dahlmann ..	Petaluma	\$2 00
Best patchwork	Mrs. T. M. Carr ..	Petaluma	\$2 00
Best exhibit of millinery	Miss Lena Mauzy ..	Petaluma	\$7 50
Best bonnet	Miss Lena Mauzy ..	Petaluma	\$3 00
CLASS III—BREAD, CAKES, ETC.			
Best wheat bread	Mrs. J. C. Diamond ..	Petaluma	\$3 00
Best Boston brown bread	Mrs. L. G. Nay ..	Petaluma	\$3 00
Best corn bread	Mrs. L. G. Nay ..	Petaluma	\$2 50
Best fruit cake	Mrs. A. H. Patty ..	Petaluma	\$3 50
Best pound cake	Mrs. J. C. Diamond ..	Petaluma	\$3 00
Best sponge cake	Mrs. I. Walker ..	Petaluma	\$2 50
Best coffee cake	Mrs. J. C. Diamond ..	Petaluma	\$2 00
Best assortment of tarts	Mrs. J. C. Diamond ..	Petaluma	\$3 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS IV—PLANTS, BOUQUETS, ETC.			
Best collection of shrubs, trees, and flowering plants	W. A. T. Stratton.	Petaluma .....	..\$25 00
Best exhibit of hardy evergreens and shrubs for garden	W. A. T. Stratton.	Petaluma .....	..\$5 00
Best exhibit of semi-tropic fruit trees in fruit	W. A. T. Stratton.	Petaluma .....	..\$2 50
Best exhibit of flowering roses in pots	W. A. T. Stratton.	Petaluma .....	..\$2 50
Best miniature garden with growing specimens	Miss Daisy Show.	Petaluma .....	..\$5 00
Best exhibit of fuchsias, twenty-five specimens	W. A. T. Stratton.	Petaluma .....	..\$2 50
Best exhibit of begonias, twenty specimens	W. A. T. Stratton.	Petaluma .....	..\$2 50
Best floral design	W. A. T. Stratton.	Petaluma .....	..\$3 00
Best exhibit of cut flowers, two hundred specimens	Mrs. L. C. Hedges.	Petaluma .....	..\$5 00
Best exhibit of cut dahlias, one hundred specimens	W. A. T. Stratton.	Petaluma .....	..\$2 50
Best exhibition of hanging baskets	W. A. T. Stratton.	Petaluma .....	..\$2 50
Best pair of vase bouquets	Mrs. L. C. Hedges.	Petaluma .....	..\$2 00
Best exhibit of paper flowers	Mrs. E. J. McCoy.	Petaluma .....	..\$2 00

SWEEPSTAKES.

FREE FOR THE STATE.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best exhibit of groceries	Killam & Stewart.	Petaluma .....	..\$10 00
Best exhibit of silverware	L. F. Ellsworth & Co.	Petaluma .....	..\$10 00
Best exhibit of shelf hardware	Bauer & Co.	Petaluma .....	..\$10 00
Best exhibit of agricultural implements	Bauer & Co.	Petaluma .....	..\$10 00
Best exhibit of pumps, stoves, and tinware	Kopf & Gross	Petaluma .....	..\$10 00
Best exhibit of furniture	Ellsworth & Son	Petaluma .....	..\$10 00
Best exhibit of pianos and organs	F. H. Atwater	Petaluma .....	..\$10 00
Best exhibit of pianos (Conover Bros.)	F. W. Spence & Co.	San Francisco	Diploma.
Best exhibit of crockery	F. H. Atwater	Petaluma .....	..\$10 00
Best collection of paintings	Miss J. Needham	Petaluma .....	..\$15 00
Second best collection of paintings	Mrs. J. S. Perry	Petaluma .....	..\$7 50

COUNTY EXHIBITS.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best display	Pomona Grange ..	Santa Rosa .....	..\$30 00

CHILDREN'S DEPARTMENT.

FOR CHILDREN UNDER FOURTEEN YEARS OF AGE.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best exhibit of plain sewing	Lillian Lewis	Petaluma	---\$3 00
Best exhibit of needlework	Rose Miranda	Petaluma	---\$5 00
Best exhibit of crochet work	May Fyfe	Petaluma	---\$2 00
Best knitting	Josephine Perry	Petaluma	---\$2 00
Best darning	Rue P. Tate	Sonoma	---\$2 00
Best etching	Rose Miranda	Petaluma	---\$2 00
Best pencil drawing	Maggie Wiesshand	Petaluma	---\$2 00
Best specimen of penmanship	Harold Campbell	Petaluma	---\$2 00
Best white bread	Jennie S. Gibson	Petaluma	---\$2 00
Best sponge cake	Georgie H. Ham- ilton	Petaluma	---\$2 00
Best pound cake	Abbie Waters	Petaluma	---\$2 00
Best fruit cake	Abbie Waters	Petaluma	---\$2 00
Best fruit cake (special premium)	Helen Munday	Petaluma	---\$2 00
Best painting	Paul Sperry	Petaluma	---\$5 00
Largest variety of eggs	Mable Lewis	Petaluma	---\$2 00
Prettiest and most tastily dressed doll	Laura Palmer	Petaluma	---\$2 00

SPECIAL PREMIUM.

BY DR. G. M. SAUL, OF PETALUMA.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best developed baby under one year old	James Bloom	Petaluma	Baby car- riage, \$25

SPECIAL PREMIUMS.

BY THE SOCIETY.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best collection of olive oil	Col. Geo. F. Hooper	Sonoma	Diploma.
Best collection of canned fruit	Petaluma Fruit Packing Co.	Petaluma	Diploma.

SPEED PROGRAMME.

TUESDAY, AUGUST 30, 1887.

RACE NO. 1—RUNNING.

For two-year olds. Twenty-five dollars entrance; ten dollars forfeit; one hundred and fifty dollars added; fifty dollars to second horse. Five eighths of a mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rosedale, by Joe Hooker	Matt. Storns	Oakland.
Kildare, by Kyrle Daly	Matt. Storns	Oakland.
Carmen, by Wildidle	Laurel Wood Stables	Santa Clara.
Kyrle D, by Kyrle Daly	Laurel Wood Stables	Santa Clara.
Elma E (formerly Tricksey), by Joe Hooker	C. H. Eldred	Sacramento.
Ito, by Ironclad	James Maddox	Santa Rosa.
Serperlottle, by Norfolk	Owen Brothers	Fresno.

Position at Starting.	Position at Close.
1. Rosedale	Carmen
2. Seperlottle	Rosedale
3. Kyrle D	Seperlottle
4. Carmen	Kyrle D

Time—1:03.

RACE NO. 2—TROTTING.

Purse, two hundred and fifty dollars. For two-year olds. One mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Troy, g. c., by Gen. McClellan	S. Crandall	Petaluma.
Princess, b. f., by Hernani	J. H. White	Lakeville.
Alice, ch. f., by Hernani	J. H. White	Lakeville.
Alto, br. c., by Anteo	M. O'Reily	Petaluma.
Silkey, ch. f., by Dawn	I. M. Proctor	Petaluma.
George W, b. c., by Alex Button	J. T. Ludwig	Santa Rosa.
Pilgrim, s. c., by Dawn	A. L. Whitney	Petaluma.
Oaknut, s. c., by Dawn	W. R. Overholser	Petaluma.
Anti-Coolie, br. c., by Anteo	D. R. Misner	Petaluma.
Clara Z, g. f., by Capri	A. J. Zane	Healdsburg.
Nellie T, b. f., by Mambrino Eclipse	Wm. C. Turner	Vallejo.
Alfred G, b. c., by Anteo	G. E. Guerne	Santa Rosa.
Redwood, b. c., by Anteo	A. McFadgen	Santa Rosa.
Star K, blk. c., by Mambrino Eclipse	Thos. Smith	Santa Rosa.

Position at Starting.	Position at Close.
1. Anti-Coolie	Clara Z
2. Star K	Star K
3. Alfred G	Alfred G
4. Clara Z	Anti-Coolie

Time—2:45; 2:48.

RACE NO. 3—TROTTING.

2:25 Class. Purse, seven hundred dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Woodnut, ch. s., by Nutwood	B. C. Holly	Vallejo.
Joe Arthurton, b. s., by Arthurton	J. A. Goldsmith	Oakland.
Longfellow, ch. s., by Whipple Hambletonian	W. H. Seal	Mayfield.
Marm, b. s., by Quinn's Patchen	P. Farrell	San Francisco.

Position at Starting.	Position at Close.
1. Marin	Woodnut
2. Woodnut	Longfellow
3. Longfellow	Marin
4. Joe Arthurton	Joe Arthurton

Time—2:23 $\frac{3}{4}$; 2:24 $\frac{3}{4}$; 2:23.

WEDNESDAY, AUGUST 31, 1887.

RACE NO. 4—RUNNING.

Free purse, two hundred dollars; for all ages; fifty dollars to second horse. One mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Grover Cleveland, ch. c., by Monday	Matt. Storns	Oakland.
Ninena, ch. f., by Jim Brown	B. C. Holly	Vallejo.
Patti, b. m., by Wildidle	Laurel Wood Stables	Santa Clara.
Billy the Kid, by Leinster	A. D. West	Grass Valley.
Moonlight, b. f., by Thad Stevens	C. H. Eldred	Sacramento.
Fanny Parnell, b. m., by Shannon	D. McGovern	Petaluma.
Oro, b. s., by Norfolk	Owen Brothers	Fresno.

Position at Starting.	Position at Close.
1. Grover Cleveland	Grover Cleveland
2. Ninena	Ninena
3. Fanny Parnell	Fanny Parnell
4. Oro	Oro

Time—1:44 $\frac{1}{4}$; 1:44 $\frac{3}{4}$.

RACE NO. 5—TROTTING.

2:38 Class. Purse, six hundred dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Gertrude Russell, b. f., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Howard, b. g., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Perihelion, b. g., by Admiral	J. A. Goldsmith	Oakland.
Alfred S, b. g., by Elmo	W. H. Seal	Mayfield.
Boss, b. g., by Gladiator	S. Sperry	Petaluma.
Allo, br. s., by Altoona	A. C. Davenport	Stockton.
Maggie E, br. m., by Nutwood	J. W. Donathan	San Francisco.
Old Nick, b. g., by Electioneer	W. B. Bradbury	San Francisco.
Inez, b. m., by The Moor	L. J. Rose, Jr.	S. Buenaventura.

RACE No. 5—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Alfred S.	Alfred S. 1 1 1
2. Inez	Maggie E. 3 4 2
3. Maggie E.	Allo 4 2 3
4. Allo	Old Nick 2 3 6
5. Perihelion	Inez 5 5 5
6. Old Nick	Perihelion 6 6 4

Time—2:22 $\frac{1}{4}$; 2:24 $\frac{3}{4}$; 2:23 $\frac{1}{2}$.

RACE No. 6—TROTTING.

2:20 Class. Purse, one thousand dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sister, b. m., by Admiral	J. A. Goldsmith .....	..... Oakland.
Maid of Oaks, ch. m., by Duke McClellan	A. McDowell .....	..... San Francisco.
Lot Slocum, b. g., by Electioneer	Lee Shaner .....	..... San Francisco.
Menlo, b. s., by Nutwood	J. W. Donathan .....	..... San Francisco.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Menlo	Lot Slocum 1 1 1
2. Lot Slocum	Menlo 2 2 2
3. Sister	Sister 3 3 3
4. Maid of Oaks	Maid of Oaks 4 4 4

Time—2:18 $\frac{3}{4}$; 2:19 $\frac{1}{4}$; 2:20 $\frac{1}{4}$.

THURSDAY, SEPTEMBER 1, 1887.

RACE No. 7—RUNNING.

For three-year olds. Fifty dollars entrance; twenty-five dollars forfeit. Two hundred and fifty dollars added. One hundred dollars to second horse; third to save stake. One and one eighth miles dash. Winners of any race this year to carry five pounds extra; of two or more, ten pounds. Maidens allowed five pounds.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jim Duffy, s. h., by Joe Hooker	F. P. Lowell .....	..... Sacramento.
Narcola, b. m., by Norfolk	Matt. Storns .....	..... Oakland.
Adeline, ch. f., by Enquirer	D. J. McCarty .....	..... San Francisco.
Notidle, ch. f., by Wildidle	M. F. Tarpey .....	..... Oakland.
Sunday, b. g., by Ironclad	James Maddox .....	..... Santa Clara.
Alice, b. f., by Haddington	J. McM. Shafter .....	..... San Francisco.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Jim Duffy	Adeline 0 1
2. Adeline	Jim Duffy 0 2

Time—1:59; 1:59.

RACE NO. 8—PACING.

Special pacing race for named horses. Purse, four hundred dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ella S. r. m., by Tom Hall	L. J. Smith	Denver, Col.
Billy Bunker, b. g., by Harry Clay, Jr.	F. Hitchcock	Denver, Col.
Fred Ross, b. g., sire unknown	Fred. Ross	Pleasanton.
Haverly, ch. g., by Kansas Central	R. Havey	San Francisco.

Position at Starting.	Position at Close.
1. Ella S	Ella S
2. Haverly	Billy Bunker
3. Fred Ross	Fred Ross
4. Billy Bunker	Haverly

Time—2:25; 2:24; 2:22 $\frac{1}{4}$; 2:22 $\frac{1}{2}$; 2:25 $\frac{1}{2}$.

RACE NO. 9—TROTTING.

For foals of 1886. Twenty-five dollars stake; one hundred and fifty dollars added; five dollars to accompany nominations; ten dollars to be paid May first; ten dollars to be paid August first. One mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Combination, blk. c., by Director	J. A. Goldsmith	Oakland.
George V, b. c., by Sidney	G. Valensin	Oakland.
—, b. f., by Hawthorne	H. Whiting	Stockton.
—, blk. c., by Hawthorne	H. Whiting	Stockton.
Gertie, by Capri	Isaac Gunn	Healdsburg.
Milton D, blk. c., by Jim Mulvaney	R. H. Nason	Gilroy.
Lady Sargent, g. f., by Jim Mulvaney	R. H. Nason	Gilroy.
Storm, br. c., by Tempest	B. E. Harris	San Francisco.
Secretary, blk. c., by Director	Daniel Frasier	Petaluma.
Captor, g. c., by Capri	A. J. Zane	Healdsburg.
Lupin, s. f., by Alert	J. D. Bell	San Francisco.
Directa, blk. f., by Director	Fred. W. Loeber	St. Helena.
Jakut, g. c., by Bay Rose	E. Giddings	Lemoore.
Daytime, ch. c., by Dawn	P. J. Shafter	Olema.
Victor, b. c., by Hernani	J. H. White	Lakeville.

Position at Starting.	Position at Close.
1. Secretary	George V
2. Captor	Secretary
3. George V	Captor

Time—2:57 $\frac{1}{4}$.

RACE NO. 10—TROTTING.

For three-year olds. Purse, six hundred dollars. One mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maiden, b. f., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Ella, b. f., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Flora M, b. f., by Elector	L. A. Richards	Grayson.
Soudan, blk. s., by Sultan	L. J. Rose	San Gabriel.

Walkover for Soudan. Time—3:02 $\frac{1}{2}$.

RACE No. --PACING.

Special pacing race. Purse, one hundred and fifty dollars. Against time; to beat 2:17½.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
L. C. Lee, blk. s., by Elmo	H. Hitchcock	San Francisco.
<i>Time</i> —2:23¼; 2:18; 2:19.		

FRIDAY, SEPTEMBER 2, 1887.

RACE No. 11—RUNNING.

For all ages. Twenty-five dollars entrance; ten dollars forfeit; one hundred and fifty dollars added; fifty dollars to second horse.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fusilade's Last, ch. f., by John W. Norton	B. C. Holly	Vallejo.
Sunday, b. g., by Ironclad	Jas. Maddox	Santa Rosa.
Fanny Parnell, b. m., by Shannon	D. McGovern	Petaluma.
Alice S, b. f., by Haddington	J. McM. Shafter	San Francisco.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Sunday	Fanny Parnell	1
2. Fanny Parnell	Fusilade's Last	2
3. Fusilade's Last	Sunday	3
<i>Time</i> —1:45¾.		

RACE No. --RUNNING.

For named horses. Purse, one hundred dollars. Three fourths of a mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
John Gray, g. g., by Shilo	Owens Brothers	Fresno.
Bolero, b. c., by Norfolk	D. McCarty	San Francisco.
Nick of the Woods, s. s., by Leinster	R. Edwards	Grass Valley.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. John Gray	John Gray
2. Nick of the Woods	Bolero
3. Bolero	Nick of the Woods

Time—1:17.

RACE No. 12—DISTRICT TROTTING.

For three-year olds. Purse, three hundred dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Daisy S, blk. f., by Mambrino Eclipse	Thos. Smith	Vallejo.
Mortimer, br. c., by Electioneer	W. Page	Penn's Grove.
Annetto, b. f., by Anteo	M. O'Reily	Petaluma.
St. Jacob, b. c., by Alexander	W. P. Fine	Petaluma.
Hermann, b. c., by General Dana	S. Crandall	Petaluma.

RACE NO. 12—DISTRICT TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. St. Jacob	Daisy S. 1
2. Daisy S.	St. Jacob dis.
3. Hermann	Hermann dis.
4. Mortimer	Mortimer dis.
5. Annetto	Annetto dis.

Time—2:42.

RACE NO. 13—TROTTING.

For foals of 1885. Fifty dollars stake; two hundred dollars added. Ten dollars to accompany nomination, fifteen dollars to be paid May first, twenty-five dollars to be paid August first. Mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Direct, blk. c., by Director	J. A. Goldsmith	Oakland.
Goldleaf, s. f., by Sidney	D. Culross	Oakland.
Memo, blk. c., by Sidney	G. Valensin	Oakland.
Linda, blk. f., by Sidney	G. Valensin	Oakland.
Moses S, b. c., by Hawthorn	H. Whiting	Stockton.
Grandee, by LeGrand	Wm. Corbett	San Francisco.
Clara Z, g. f., by Capri	A. J. Zane	Healdsburg.
Nellie G, g. f., by Capri	Isaac Gurn	Healdsburg.
Minot, b. g., by Bay Rose	E. Giddings	Lemoore.
Pilgrim, ch. c., by Dawn	A. L. Whitney	Petaluma.
—, b. f., by Hernani	J. H. White	Lakeville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Grandee	Grandee 1 1
2. Moses S	Moses S 3 2
3. Memo	Memo 2 3

Time—2:40; 2:33½.

RACE NO. 14—TROTTING.

2:23 Class. Purse, eight hundred dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rexford, b. c., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Daisy S, ch. m., by Tilton Almont	B. W. Levens	Oakland.
Lottie M, b. m., by Nephew	W. H. Parker	Stockton.
Black Diamond, blk. g., by Milton's Goldnut	H. Hitchcock	San Francisco.
Valensin, s. s., by Crown Point	J. A. Goldsmith	Oakland.
Magdallah, ch. m., by Primus	J. W. Donathan	San Francisco.
Thapsin, blk. g., by Berlin	Wilber F. Smith	Sacramento.
Valentine, b. g., by Tyrrel's Clay	J. H. Kelly	San Bernardino.
Stamboul, b. s., by Sultan	L. J. Rose	San Gabriel.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Thapsin	Thapsin 1 1 1
2. Daisy S	Daisy S 3 2 2
3. Valentine	Valentine 2 3 3

Time—2:27¾; 2:24¾; 2:23¾.

RACE NO. 14—SPECIAL TROTTING.

For named horses. Purse, three hundred dollars. One mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Marin, b. s., by Quinn's Patchen	P. Farrell	San Francisco.
Joe Arthurton, b. s., by Arthurton	J. A. Goldsmith	Oakland.
Longfellow, ch. s., by Whipple's Hambletonian	W. H. Seals	Mayfield.
<i>Position at Starting.</i>		
1. Marin	Longfellow	2 1 1 2 0 1
2. Joe Arthurton	Joe Arthurton	1 2 2 1 0 2
3. Longfellow	Marin	dis.
<i>Time—2:23$\frac{1}{4}$; 2:25$\frac{1}{4}$; 2:25$\frac{3}{4}$; 2:26$\frac{1}{4}$; 2:28.</i>		

SATURDAY, SEPTEMBER 3, 1887.

RACE NO. 15—RUNNING.

For all ages. Free purse, two hundred and fifty dollars; fifty dollars to second horse. One and one half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Narcola, b. m., by Norfolk	Matt. Storns	Oakland.
Ninena, ch. f., by Jim Brown	B. C. Holly	Vallejo.
Laura Gardner, ch. f., by Jim Brown	W. L. Appleby	Santa Clara.
Billy the Kid, b. g., by Leinster	A. D. West	Grass Valley.
Moonlight, b. f., by Thad Stevens	C. H. Eldred	Sacramento.
Fanny Parnell, br. m., by Shannon	D. McGovern	Petaluma.
Alice S, b. f., by Haddington	J. McM. Shafter	San Francisco.
Hello, s. g., by Shannon	A. Harrison	Stockton.
<i>Position at Starting.</i>		
1. Laura Gardner	Laura Gardner	1
2. Narcola	Narcola	2
3. Fanny Parnell	Ninena	3
4. Ninena	Moonlight	4
5. Moonlight	Fanny Parnell	5
<i>Time—2:37$\frac{1}{2}$.</i>		

RACE NO. 16—TROTTING.

For District 2:40 Class. Purse, four hundred dollars. One mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hernani, b. s., by Electioneer	J. H. White	Lakeville.
Roena, b. m., by Echo	G. Pacheco	Novato.
Flora B, br. m., by Whippleton	F. W. Loeber	St. Helena.
Viking, gr. g., by Rustic	P. J. Shafter	Olema.
Milton, b. g., by Milton Medium	Jas. Maddox	Santa Rosa.
Budd, by Gladiator	Wm. McGill	Vallejo.
Woxie Pope, g. g., by Gray McClellan	S. Crandall	Petaluma.
Mattie P, b. m., by Jackson Temple	D. R. Misener	Petaluma.
Nightingale, b. m., by Bashaw	Jo Edge	Vallejo.
Reka Patchen, b. m., by Alexander	Chas. Hart	Petaluma.

RACE NO. 16—TROTTING—Continued.

<i>Position at Starting.</i>		<i>Position at Close.</i>				
1. Mattie P	Flora B.	1	1	2	2	1
2. Flora B	Mattie P	3	2	1	1	2
3. Nightingale	Viking	2	3	4	3	3
4. Viking	Nightingale	4	4	3	dis.	

Time—2:35 $\frac{1}{4}$; 2:33 $\frac{1}{2}$; 2:32; 2:34 $\frac{1}{4}$; 2:38 $\frac{3}{4}$.

RACE NO. 17—TROTTING.

For 2:27 Class. Purse, seven hundred dollars. One mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Spry, b. g., by General Benton	Palo Alto Stock Farm	Menlo Park.
Jane L, br. m., by Hambletonian Mambrino	L. B. Lindsey	Portland, Oregon.
Luella, b. m., by Chicamauga	H. Hitchcock	San Francisco.
Mt. Vernon, b. s., by Nutwood	J. A. McCloud	Stockton.
Lily Stanley, b. m., by Whippleton	J. A. Goldsmith	Oakland.
Maid of Oaks, ch. m., by Duke McClellan	A. McDonell	San Francisco.
Kate Ewing, blk. m., by Berlin	Lee Shaner	San Francisco.

<i>Position at Starting.</i>		<i>Position at Close.</i>				
1. Maid of Oaks	Kate Ewing	1	2	1	1	
2. Jane L	Mt. Vernon	2	1	2	3	
3. Luella	Jane L	4	4	3	2	
4. Mt. Vernon	Maid of Oaks	3	3	4	4	
5. Kate Ewing	Luella	dis.				

Time—2:21 $\frac{1}{2}$; 2:24 $\frac{3}{4}$; 2:22 $\frac{1}{4}$; 2:21 $\frac{1}{4}$.

RACE NO. 18—TROTTING.

Free for all. Purse, one thousand two hundred dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sister, b. m., by Admiral	J. A. Goldsmith	Oakland.
Lot Slocum, b. g., by Electioneer	Lee Shaner	San Francisco.
Anteo, b. s., by Electioneer	I. DeTurk	Santa Rosa.
Adair, b. g., by Electioneer	W. F. Smith	Sacramento.

<i>Position at Starting.</i>		<i>Position at Close.</i>				
1. Sister	Lot Slocum	1	3	1	1	
2. Adair	Sister	2	1	2	2	
3. Lot Slocum	Adair	3	2		3	

Time—2:21 $\frac{3}{4}$; 2:22; 2:22 $\frac{1}{2}$; 2:32.

TRANSACTIONS
OF THE
FIFTH DISTRICT AGRICULTURAL ASSOCIATION
For the Year 1887,

Composed of the Counties of San Mateo and Santa Clara.

OFFICERS OF THE ASSOCIATION.

H. H. MAIN	President.
W. C. MORROW	Secretary.
W. D. TISDALE	Treasurer.

DIRECTORS.

J. R. WEBBER.....	Milpitas, Santa Clara County.
GEO. BEMENT.....	Redwood City, San Mateo County.
ALEX. GORDON.....	Redwood City, San Mateo County.
ED. YOUNGER.....	San José.
G. B. POLHEMUS.....	San José.
SAM. N. RUCKER.....	San José.
H. H. MAIN.....	San José.

REPORT.

SAN JOSÉ, October 31, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Fifth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

W. C. MORROW, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Sale of season tickets.....	\$225 00	
Sale of single admission tickets.....	1,222 00	
Sweepstake entrance, 10 per cent of \$200, five entries.....	50 00	
Sale of goods and wares.....	60 00	
State appropriation, 1887.....	1,800 00	
		<u>\$3,357 00</u>

Assets—Amount of cash received from all sources..... \$3,357 00

Liabilities.

Amount expended for premiums, etc. \$3,055 70

RECAPITULATION.

Total amount of receipts.....	\$3,357 00	
Total amount expended.....	\$3,055 70	
Balance of cash on hand.....	301 30	
		<u>\$3,357 00</u>

Expenditures.

Premiums paid as per premium list.....	\$1,541 50	
Premiums paid baby show (special).....	20 00	
Sherman's entertainments, eight nights.....	500 00	
Rent of hall, nine nights.....	136 00	
Salary of Secretary and employés.....	265 60	
Advertising and printing.....	375 10	
Gas, music, and incidental expenses.....	217 50	
		<u>\$3,055 70</u>

Outstanding bills for the year 1885, amounting to \$720, and \$1,400, individual notes of the Directors for money advanced same year, is not calculated in above report.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Two-horse family carriage.....	Keiser & Koch.....	San José.....	\$10 00
One-horse family carriage.....	Keiser & Koch.....	San José.....	\$5 00
Top buggy.....	Keiser & Koch.....	San José.....	\$5 00
Open buggy.....	Hatman & Nor- mandan.....	San José.....	\$5 00
Two-seated open buggy.....	Hatman & Nor- mandan.....	San José.....	\$5 00
Farm wagon.....	Farmers' Union.....	San José.....	\$5 00
Four-horse spring wagon.....	Farmers' Union.....	San José.....	\$5 00
Driving cart.....	Keiser & Koch.....	San José.....	\$5 00
Driving cart.....	Hatman & Nor- mandan.....	San José.....	\$5 00
Track sulky.....	Keiser & Koch.....	San José.....	\$5 00
Track sulky.....	Hatman & Nor- mandan.....	San José.....	\$5 00
Ladies' phaeton.....	Hatman & Nor- mandan.....	San José.....	\$5 00
Ladies' phaeton.....	Keiser & Koch.....	San José.....	\$5 00
Delivery wagon.....	Keiser & Koch.....	San José.....	\$5 00
Delivery wagon.....	Hatman & Nor- mandan.....	San José.....	\$5 00
Display of carriage material.....	Hatman & Nor- mandan.....	San José.....	\$5 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Exhibit of silk goods.....	S. J. Silk Manu- facturing Co.....	San José.....	\$20 00
Exhibit of woolen goods.....	S. J. Woolen Mills.....	San José.....	\$20 00
Exhibit of oilcloths, carpets, etc.....	Rucker Bros.....	San José.....	\$20 00
Exhibit of dry and fancy goods.....	O. A. Hale & Co.....	San José.....	\$20 00
Exhibit of fancy goods.....	Mrs. T. Zingg.....	San José.....	\$5 00
Exhibit of fancy goods.....	Mrs. C. Haile.....	San José.....	\$5 00
Exhibit of family sewing.....	Mrs. T. Zingg.....	San José.....	\$2 00
Ottoman cover.....	Mrs. C. Haile.....	San José.....	\$5 00
Embroidered table cover.....	Mrs. C. Haile.....	San José.....	\$3 00
Lambrequin.....	Miss A. Boyle.....	San José.....	\$2 00
Crochet shawl.....	Mrs. C. D. Horne.....	Santa Clara.....	\$2 00
Knit shawl.....	Mrs. C. Haile.....	San José.....	\$5 00
Kensington embroidery.....	Mrs. C. Haile.....	San José.....	\$3 00
Embroidered piano cover.....	Mrs. C. Haile.....	San José.....	\$5 00
Silk embroidery.....	Miss A. Boyle.....	San José.....	\$3 00
Silk embroidery (rec. for special).....	Mrs. C. Haile.....	San José.....	\$3 00
Toilet set.....	Mrs. C. Haile.....	San José.....	\$5 00
Outline embroidery.....	Mrs. C. D. Horne.....	Santa Clara.....	\$5 00
Outline embroidery.....	Mrs. C. D. Horne.....	Santa Clara.....	\$5 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Embroidered banner	Mrs. C. Haile	San José	\$3 00
Sofa cushion	Mrs. C. Haile	San José	\$2 00
Embroidered chair	Mrs. C. Haile	San José	\$5 00
Embroidered picture	Mrs. C. Haile	San José	\$2 00
Knit bedspread	Mrs. C. Haile	San José	\$3 00
Embroidered slippers	Mrs. C. Haile	San José	\$2 00
Chenille work	Mrs. C. Haile	San José	\$2 00
Embroidered dress (rec. special)	Mrs. C. Haile	San José .....	.....
Beaded work	Mrs. C. Haile	San José	\$2 00
Worked veil	Mrs. C. Haile	San José	\$2 00
Gents' shirts	J. L. Reidy	San José	\$2 00
Lady's dress	Mrs. T. Zingg	San José	\$5 00
Display of underclothing	J. L. Reidy	San José	\$5 00
Display of hats	Mrs. T. Zingg	San José	\$5 00
Dining table mats	Miss A. Boyle	San José	\$3 00
Dressmaking	Mrs. T. Zingg	San José	\$5 00
Ornamental needlework	Mrs. T. Zingg	San José .....	.....
Ornamental needlework	Mrs. C. Haile	San José	\$5 00
Ornamental needlework	Miss A. Boyle	San José .....	.....
Display of corsets	Mrs. E. D. Eddy	San José	\$2 00
CLASS II.			
Moss and lichen work	Mrs. O. J. Albee	Santa Clara	\$3 00
Moss and lichen work	Mrs. T. Zingg	San José .....	.....
Hair switches	Mrs. T. Zingg	San José	\$3 00
Ornamental grasses	Mrs. T. Zingg	San José	\$2 00
Stuffed birds	Mrs. T. Zingg	San José	\$2 00
Ladies' underclothing	Mrs. T. Zingg	San José	\$5 00
Children's underclothing	Mrs. C. D. Horne	San José	\$5 00
Silk patchwork quilt	Mrs. C. D. Horne	San José	\$2 00
Fifteen yards of rag carpet	Mrs. C. D. Horne	San José	\$5 00
Floor rug	Mrs. C. D. Horne	Santa Clara	\$2 00
Afghan for carriage	Mrs. C. D. Horne	Santa Clara	\$5 00
Men's and boys' hats	A. McCabe	San José	\$5 00
Embroidered handkerchief	Mrs. C. Haile	San José	\$1 00
Display of feathers	Rucker Bros.	San José	\$2 00
Shell work	Mrs. C. D. Horne	Santa Clara	\$3 00
Wax flowers	Mrs. C. D. Horne	Santa Clara	\$3 00
Wax fruit	Mrs. C. D. Horne	Santa Clara	\$2 00
Artificial flowers	Mrs. C. D. Horne	Santa Clara	\$3 00
Hair flowers	Mrs. C. D. Horne	Santa Clara	\$3 00
Leaf work	Mrs. C. D. Horne	Santa Clara	\$2 00
Natural flowers	Mrs. C. D. Horne	Santa Clara	\$2 00
CLASS III—PRINTING, LITHOGRAPHING, ETC.			
Book printing	McNeil Bros.	San José	\$5 00
Job printing	McNeil Bros.	San José	\$5 00
Lithographic printing	McNeil Bros.	San José	\$3 00
Chromo-lithographing	McNeil Bros.	San José	\$3 00
Helotype printing	McNeil Bros.	San José	\$3 00
Engraving on wood	McNeil Bros.	San José	\$3 00
Engraving on steel	McNeil Bros.	San José	\$3 00
Specimens lithography	McNeil Bros.	San José	\$3 00
Bookbinding	McNeil Bros.	San José	\$3 00
Bookbinding	McNeil Bros.	San José	\$3 00
Blank-bookbinding	McNeil Bros.	San José	\$3 00
Printing from wood cuts	McNeil Bros.	San José	\$3 00
Stationery	Geo. W. Welch	San José	\$3 00
Maps, globes, etc.	Geo. W. Welch	San José	\$3 00
Sculpture	Combs, Blanchard & O'Neil	San José	\$3 00
Statuary and busts	Combs, Blanchard & O'Neil	San José	\$5 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Saddlery and harness	Keiser & Koch	San José	\$10 00
Team harness	Keiser & Koch	San José	\$5 00
Double harness	Keiser & Koch	San José	\$5 00
Single harness	Keiser & Koch	San José	\$5 00
Display of leather	Keiser & Koch	San José	\$5 00
Display of saddletrees	A. Ayers & Sons	San José	\$3 00
Saddles and bridles	A. Ayers & Sons	San José	\$5 00
Paper hangings, etc.	J. P. Jarman & Co.	San José	\$5 00
Display of paper	J. P. Jarman & Co.	San José	\$5 00
Boots, shoes, etc.	Holly & Smith	San José	\$3 00
Ladies' boots, shoes, etc.	Holly & Smith	San José	\$3 00
Leather gloves, etc.	Angora R. & G. Co.	San José	\$5 00
Skins and robes	Angora R. & G. Co.	San José	\$5 00
Rubber hose and belting	Farmers' Union	San José	\$5 00
Leather	Farmers' Union	San José	\$5 00
CLASS II.			
Copper work and tinware	John Stock's Sons	San José	\$5 00
Brass work	John Stock's Sons	San José	\$5 00
Door and window trimmings	John Stock's Sons	San José	\$5 00
Plumbers' goods	John Stock's Sons	San José	\$5 00
Chandeliers and burners	John Stock's Sons	San José	\$5 00
Iron fencing and posts	John Stock's Sons	San José	\$5 00
Horseshoes	Jas. Lamb	San José	\$5 00
Silverware and jewelry	G. W. Ryder	San José	\$10 00
Firearms and fishing tackle	F. Schilling	San José	\$5 00
CLASS III.			
Stoves, ranges, etc.	John Stock's Sons	San José	\$10 00
Marbleized iron	John Stock's Sons	San José	\$3 00
Marbleized stone	John Stock's Sons	San José	\$3 00
Marbleized wood	John Stock's Sons	San José	\$3 00
Marbleized ironware	John Stock's Sons	San José	\$3 00
Ornamental statuary	John Stock's Sons	San José	\$3 00
Cauldrons and steamers	John Stock's Sons	San José	\$3 00
CLASS IV.			
Musical instruments	A. Laurilliard	San José	\$15 00
Upright piano	A. Laurilliard	San José	\$5 00
Square piano	A. Laurilliard	San José	\$5 00
Organ	A. Laurilliard	San José	\$3 00
CLASS V.			
Display of furniture	S. J. F. Mfg Co.	San José	\$10 00
Display of furniture	N. Y. F. Mfg Co.	San José	\$5 00
Bedroom set	S. J. F. Mfg Co.	San José	\$5 00
Bedroom set	N. Y. F. Mfg Co.	San José	\$5 00
Spring bed	N. Y. F. Mfg Co.	San José	\$5 00
Mattress	N. Y. F. Mfg Co.	San José	\$5 00
Parlor furniture	N. Y. F. Mfg Co.	San José	\$5 00
Extension table	N. Y. F. Mfg Co.	San José	\$3 00
Upholstering	N. Y. F. Mfg Co.	San José	\$5 00
California woods	N. Y. F. Mfg Co.	San José	\$5 00
School desks	N. Y. F. Mfg Co.	San José	\$3 00
Willowware	S. J. F. Mfg Co.	San José	\$5 00
CLASS VI.			
Blinds, and sash, and shades	S. C. V. M. & L. Co.	San José	\$5 00
Pine, oak, and walnut	S. C. V. M. & L. Co.	San José	\$5 00
Woodenware	O. Promis	San José	\$5 00
Hair brushes	J. J. January	San José	\$3 00
Gilt frames	Fletcher Bros.	San José	\$3 00
Twist molding	Fletcher Bros.	San José	\$2 00
Scroll sawing	S. C. V. M. & L. Co.	San José	\$3 00
Carpentering	E. D. Eddy	San José	\$3 00
Coopers' wares	P. O. Burns & Co.	San José	\$5 00
Rustic work	S. C. V. M. & L. Co.	San José	\$5 00

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS VII.			
Water, sewer, and drain pipe	S. J. Pottery Co.	San José	\$5 00
Pottery, etc.	S. J. Pottery Co.	San José	\$5 00
Stoneware	S. J. Pottery Co.	San José	\$5 00
CLASS VIII.			
Ornithology of California	Mrs. T. Zingg	San José	\$3 00
Display of sandstone	E. B. Goodrich	Greystone	\$5 00
Collection of minerals	Mrs. T. Zingg	San José	\$3 00
Collection of fossils	Mrs. T. Zingg	San José	\$3 00
Collection of crystallized minerals	Mrs. T. Zingg	San José	\$3 00
Collection of the vegetable kingdom	E. Bourguignon	San José	\$3 00
CLASS IX.			
Mechanical drawing	C. T. Ryland, Jr.	San José	\$5 00
Farmhouse drawing	C. T. Ryland, Jr.	San José	\$5 00
Residence drawing	C. T. Ryland, Jr.	San José	\$5 00
CLASS X.			
Polished California marble	Combs, Blanchard & O'Neil	San José	\$10 00
Polished granite	Combs, Blanchard & O'Neil	San José	\$10 00
Marble mantels	John Stock's Sons	San José	\$5 00
Marbleized iron mantels	John Stock's Sons	San José	\$5 00
Marbleized slate mantels	Combs, Blanchard & O'Neil	San José	\$5 00
Sculptors' work	Combs, Blanchard & O'Neil	San José	\$10 00

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Display of silk business	S. J. Silk M'g. Co.	San José	\$5 00
CLASS II.			
Sample of wheat	J. O'Brien	San José	\$5 00
Sample of chevalier barley	J. O'Brien	San José	\$3 00
Sample of barley	J. O'Brien	San José	\$3 00
Sample of oats	J. O'Brien	San José	\$3 00
Exhibit of millers' products	City Mills	San José	\$10 00
Exhibit of corn	Mrs. C. D. Horne	Santa Clara	\$3 00
Exhibit of garden seeds	C. C. Morse	Santa Clara	\$5 00
CLASS III.			
Exhibit of potatoes	J. O'Brien	San José	\$3 00
Exhibit of sugar beets	J. Osborn	San José	\$2 00
Exhibit of tomatoes	Mrs. C. D. Horne	Santa Clara	\$2 00
Exhibit of squashes	G. Wakefield	San José	\$2 00
Exhibit of pumpkins	G. Wakefield	San José	\$2 00
Exhibit of vegetables	J. O'Brien	San José	\$10 00
CLASS IV.			
Greenhouse plants	E. Bourguignon	San José	\$20 00
Ornamental plants	E. Bourguignon	San José	\$10 00
Flowering plants	E. Bourguignon	San José	\$10 00
Hanging baskets	E. Bourguignon	San José	\$5 00
Cut flowers	E. Bourguignon	San José	\$5 00
Cut roses and dahlias	E. Bourguignon	San José	\$5 00

TRANSACTIONS OF THE
FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Vases of bouquets.....	E. Bourguignon ..	San José.....	\$2 00
Parlor bouquets	E. Bourguignon ..	San José.....	\$2 00
Hand bouquets	E. Bourguignon ..	San José.....	\$2 00
Fern and leaf plants	E. Bourguignon ..	San José.....	\$5 00
Flowers by amateur.....	Mrs. O. J. Albee....	San José.....	\$5 00
CLASS V.			
Exhibit of cheese	G. B. Polhemus....	San José.....	\$10 00
CLASS VI.			
Fifty pounds of butter	G. B. Polhemus....	San José.....	\$10 00
Bakers bread, crackers, etc.....	E. McGettigan....	San José.....	\$5 00
Exhibit of biscuit	Miss D. Morgan....	San José.....	\$2 00
Exhibit of soda biscuit	Miss D. Morgan....	San José.....	\$2 00
Exhibit of corn bread	Miss D. Morgan....	San José.....	\$2 00
Exhibit of rye bread	Miss D. Morgan....	San José.....	\$2 00
Exhibit of brown bread	Miss D. Morgan....	San José.....	\$2 00
Exhibit of wheat bread	Miss D. Morgan....	San José.....	\$2 00
Exhibit of domestic cakes	Miss D. Morgan....	San José.....	\$2 00
Exhibit of domestic pastry.....	Miss D. Morgan....	San José.....	\$2 00
Exhibit of loaf of bread	Miss E. Hayes.....	San José.....	\$3 00
Exhibit of teas, coffee, and spices	A. Hart.....	San José.....	\$5 00
CLASS VII.			
Exhibit of hams and bacon	Andrews & Coy- kendall	San José.....	\$5 00
Exhibit of salt pork	Andrews & Coy- kendall	San José.....	\$2 00
Exhibit of lard.....	Andrews & Coy- kendall	San José.....	\$2 00
Exhibit of corned beef	Wendt & Co.....	San José.....	\$2 00
Exhibit of cured beef.....	Wendt & Co.....	San José.....	\$2 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Collection of apples	O. J. Albee.....	San José.....	\$10 00
Collection of apples	O. Stevens.....	San José.....	\$5 00
Six varieties of apples	O. J. Albee.....	San José.....	\$5 00
Six varieties of apples	O. Stevens.....	San José.....	\$2 50
Three varieties of apples	O. Stevens.....	San José.....	\$2 00
One variety of apples	O. Stevens.....	San José.....	\$1 00
Collection of pears	John Rock.....	San José.....	\$10 00
Collection of pears	O. J. Albee.....	San José.....	\$5 00
Six varieties of pears	O. J. Albee.....	San José.....	\$5 00
Six varieties of pears	John Rock.....	San José.....	\$2 50
Three varieties of pears	C. T. Settle.....	San José.....	\$2 00
One variety of pears	Mrs. C. D. Horne ..	Santa Clara ..	\$1 00
Collection of plums	John Rock.....	San José.....	\$10 00
Collection of plums	O. J. Albee.....	San José.....	\$5 00
Three varieties of plums	John Rock.....	San José.....	\$2 00
One variety of plums	John Rock.....	San José.....	\$1 00
Collection of peaches.....	John Rock.....	San José.....	\$10 00
Collection of peaches.....	O. J. Albee.....	San José.....	\$5 00
Three varieties of peaches.....	O. J. Albee.....	San José.....	\$2 00
Single peaches.....	O. J. Albee.....	San José.....	\$1 00
Three varieties of prunes.....	O. J. Albee.....	San José.....	\$2 00
Twenty pounds of Silver prunes.....	O. J. Albee.....	San José.....	\$5 00
Twenty pounds of Silver prunes.....	John Rock.....	San José.....	\$2 50

FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Collection of quinces	Mrs. L. J. Watkins	San José	\$5 00
Collection of figs	John Rock	San José	
Collection of figs	Mrs. C. D. Horne	Santa Clara	\$3 00
Collection of figs	O. Stevens	Santa Clara	
Collection of strawberries	John Rock	San José	\$5 00
Collection of strawberries	Mrs. C. D. Horne	Santa Clara	\$2 50
Collection of blackberries	Mrs. C. D. Horne	Santa Clara	\$5 00
Collection of blackberries	John Rock	San José	\$2 50
SWEEPSTAKES.			
Sweepstakes	O. J. Albee	San José	\$25 00
Committee also recommended special premium, diploma, and notice to A. Block for his "Acme Seedling" pear.			
CLASS II.			
Collection of oranges	I. Shaw	San José	\$5 00
Collection of lemons	I. Shaw	San José	\$5 00
CLASS III.			
Fruit in glass	J. H. Flickinger	San José	\$10 00
Fruit in glass	O. J. Albee	San José	\$5 00
Sweet pickles	O. J. Albee	San José	\$2 00
Sweet pickles	O. J. Albee	San José	\$2 00
Sweet pickles	Mrs. C. D. Horne	Santa Clara	
Home-made jellies	Mrs. L. J. Watkins	San José	\$5 00
Home-made jellies	Mrs. O. Stevens	San José	Pre. rec.
Jellies and canned goods	J. H. Flickinger	San José	\$20 00
Glazed fruit	A. Damonta	San José	\$20 00
Glazed fruit	Cal. Glazed F. Co.	San José	\$10 00
Jellies and canned goods	Golden Gate C. Co.	San José	\$10 00
CLASS IV.			
Soft-shell almonds	John Rock	San José	\$2 00
Paper-shell almonds	John Rock	San José	
Paper-shell almonds	O. J. Albee	San José	\$2 00
Hard-shell almonds	John Rock	San José	\$2 00
English walnuts	John Rock	San José	\$2 00
English walnuts	Mrs. L. J. Watkins	San José	
Black walnuts	Mrs. L. J. Watkins	San José	\$2 00
Black walnuts	John Rock	San José	
Chestnuts	John Rock	San José	\$2 00
CLASS V.			
Display of evaporated fruits	Geo. A. Fleming	San José	\$10 00
Display of apricots	Geo. A. Fleming	San José	\$3 00
Display of plums	Geo. A. Fleming	San José	\$3 00
Display of prunes	Geo. A. Fleming	San José	\$3 00
Display of pears	Geo. A. Fleming	San José	\$3 00
Display of apples	Geo. A. Fleming	San José	\$3 00
Display of peaches	Geo. A. Fleming	San José	\$3 00
Display of cherries	Geo. A. Fleming	San José	\$3 00
Sun-dried fruits	Geo. A. Fleming	San José	
Sun-dried fruits	O. J. Albee	San José	
Sun-dried fruits	J. H. Flickinger	San José	
Sun-dried fruits	O. Stevens	San José	\$10 00
Sun-dried prunes	O. Stevens	San José	
Sun-dried prunes	O. J. Albee	San José	
Sun-dried prunes	Geo. A. Fleming	San José	
Sun-dried prunes	J. H. Flickinger	San José	\$3 00
Sun-dried apricots	Geo. A. Fleming	San José	\$3 00
Sun-dried apricots	O. J. Albee	San José	
Sun-dried apricots	Geo. A. Fleming	San José	
Sun-dried apricots	O. Stevens	San José	
Sun-dried plums	O. Stevens	San José	\$3 00
Sun-dried plums	O. J. Albee	San José	
Sun-dried plums	Geo. A. Fleming	San José	
Sun-dried pears	O. J. Albee	San José	\$3 00
Sun-dried apples	O. J. Albee	San José	\$3 00
Sun-dried apples	O. Stevens	San José	

TRANSACTIONS OF THE
FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Sun-dried peaches	O. Stevens	San José .....	.....
Sun-dried peaches	J. H. Flickinger	San José	\$3 00
Sun-dried peaches	Geo. A. Fleming	San José .....	.....
Sun-dried peaches	O. J. Albee	San José .....	.....
Sun-dried cherries	Geo. A. Fleming	San José	\$3 00
Sun-dried figs	O. Stevens	San José	\$2 00
Sun-dried nectarines	G. A. Fleming	San José	\$2 00
Sun-dried raisins	G. A. Fleming	San José	\$3 00
Sun-dried currants	G. A. Fleming	San José	\$2 00
Sun-dried prunes (twenty pounds)	G. A. Fleming	San José .....	.....
Sun-dried prunes (twenty pounds)	O. J. Albee	San José	\$5 00
CLASS VI.			
Six varieties of grapes	Mrs. C. D. Horne	Santa Clara	\$5 00
Six varieties of grapes	Mrs. T. Zingg	San José	\$10 00
Display of grapes	Mrs. C. D. Horne	Santa Clara	\$20 00
Display of grapes	Mrs. T. Zingg	San José	\$10 00
Display of wine	J. B. J. Portal	San José	\$10 00
Display of wine	Mrs. C. D. Horne	Santa Clara	\$5 00
Display of California raisins	G. A. Fleming	San José	\$10 00
Display of California raisins	Mrs. C. D. Horne	Santa Clara	\$5 00
CLASS VII.			
Display of wine and brandy	P. O. Burns Wine Co.	San José	\$15 00
Display of wine and brandy	Jarvis Brandy Co.	San José	\$7 50
DRY WINES.			
White wine	P. O. Burns	San José	\$5 00
White wine	Jarvis Brandy Co.	San José	\$2 50
Claret wine	P. O. Burns	San José	\$5 00
Claret wine	G. M. Jarvis	San José	\$2 50
Sweet wine	P. O. Burns	San José	\$5 00
Sweet wine	G. M. Jarvis	San José	\$2 50
Port wine	P. O. Burns	San José	\$5 00
Port wine	G. M. Jarvis	San José	\$2 50
Sherry wine	P. O. Burns	San José	\$5 00
Sherry wine	G. M. Jarvis	San José	\$2 50

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Display of oil painting	Miss A. Boyle	San José	\$10 00
Display of oil painting	Mrs. E. T. Sawyer	San José .....	.....
Portrait in oil	Mrs. E. T. Sawyer	San José	\$5 00
Display of water colors	Mrs. E. T. Sawyer	San José .....	.....
Display of water colors	Fletcher Brothers	San José	\$3 00
Animal painting	Miss A. Boyle	San José	\$3 00
Landscape painting	Loryea Bros.	San José	\$3 00
Fruit painting	Miss A. Boyle	San José	\$5 00
Flower painting	Miss A. Boyle	San José	\$5 00
Flower painting	Mrs. E. T. Sawyer	San José .....	.....
Painting in water colors	Mrs. E. T. Sawyer	San José	\$3 00
Crayon drawing	Mrs. E. T. Sawyer	San José	\$3 00
Pencil drawing	Mrs. E. T. Sawyer	San José	\$2 00
Pen drawing	Mrs. E. T. Sawyer	San José	\$3 00
Perspective drawing	Mrs. E. T. Sawyer	San José	\$3 00
Crayon portrait	Mrs. E. T. Sawyer	San José	\$2 00
Monochromatic drawing	Miss E. Sawyer	San José	\$2 00
Painting on satin	Miss A. Boyle	San José	\$3 00

SIXTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Collection of photographs.....	Loryea Bros.....	San José.....	\$5 00
Photographic views.....	Loryea Bros.....	San José.....	\$5 00
Retouched photos.....	Loryea Bros.....	San José.....	\$5 00
Retouched photos.....	Miss A. Boyle.....	San José.....	
Carriage painting.....	Fred. Jung.....	San José.....	\$10 00
Graining on wood.....	J. P. Jarman.....	San José.....	\$5 00
Marbleizing.....	J. P. Jarman.....	San José.....	\$5 00
MISCELLANEOUS.			
Display of dental work.....	A. A. Gaston.....	San José.....	\$5 00
Display of druggists' goods.....	J. J. January.....	San José.....	\$10 00
Display of diamond work.....	G. W. Ryder.....	San José.....	\$5 00
MOST MERITORIOUS DISPLAY IN PAVILION.			
J. H. Flickinger, Mrs. E. D. Horne, Mrs. E. D. Eddy, N. Y. Furniture Co., P. O. Burns W. Co., O. J. Albee, Rucker Brothers, Mrs. C. Haile, E. Bourguig- non, A. Damonte, A. Laurilliard. Silver tea set and tray.....			\$50 00
BABY SHOW.			
Four premiums.....			\$20 00
BEST KEPT ORCHARD, FIFTEEN ACRES OR MORE.			
Two hundred and twenty acres.....	J. H. Flickinger ..	San José.....	\$75 00
Thirty-five acres.....	O. Stevens.....	Coyote.....	\$25 00
BEST KEPT VINEYARD, TEN ACRES OR MORE.			
Eighty acres.....	C. P. Hawes.....	San José.....	\$75 00
Forty acres.....	Mrs. E. Cornish....	Riverdale.....	\$25 00

TRANSACTIONS .

OF THE

SIXTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Los Angeles, Ventura, and San Bernardino.

OFFICERS OF THE ASSOCIATION.

DIRECTORS.

M. A. COVARRUBIAS	Los Angeles.
LOUIS LICHTENBERGER	Los Angeles.
J. C. NEWTON	Los Angeles.
C. H. RICHARDSON	Pasadena.
J. W. ROBINSON	Los Angeles.
L. J. ROSE	Los Angeles.
J. W. WATERS, JR.	San Bernardino.
AL. WORKMAN	Los Angeles.

REPORT.

LOS ANGELES, December 1, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Sixth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

Duly approved and audited at a regular Board meeting.

E. A. DECAMP, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Cash as per last report		\$442 10
Net proceeds of State warrant, 1886	\$1,199 28	
Pools	4,259 17	
Entrances, 1886	235 00	
Rental and bonus (Park lessees)	900 00	
Miscellaneous, uncalled premiums, contributions, etc.	1,194 05	
Bills payable (L. Lichtenberger notes)	4,500 00	
Receipts from grand stand and Park gates	6,217 45	
Sweepstake entries	48 00	
Bar and restaurant privileges, Park	980 00	
Gross receipts, Pavilion	1,454 15	
Entrance fees to races	4,490 00	
Fines improperly collected	30 00	
	<hr/>	25,207 10
Total receipts from all sources		\$25,649 20

Expenditures.

Music, Park and Pavilion	\$314 00	
Miscellaneous expense account, Park and Pavilion	1,402 02	
Payrolls	832 00	
Bill posting and advertising	572 36	
Taxes and insurance	482 05	
Permanent improvement at Park	9,770 79	
Whitewashing	331 60	
Incidental repairs	198 68	
Gross amount of premiums paid	2,565 00	
Purses and stakes paid	8,899 50	
Fines returned (improperly collected)	30 00	
	<hr/>	\$25,398 00
By cash		251 20
Total		\$25,649 20

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBRED HORSES.			
Bachelor	John Gries	Compton	---\$10 00
Grover Cleveland	Matt. Storns	Oakland	---\$20 00
Tahoe	H. L. Samuels	Los Angeles	---\$15 00
Ed McGinniss	H. L. Samuels	Los Angeles	---\$10 00
Dr. Crawford	F. M. Slaughter	Chino	---\$5 00
Narcola	Matt. Storns	Oakland	---\$10 00
Sweet Brier	B. P. Chisholt	Alosta	---\$8 00
Rosedale	Matt. Storns	Oakland	---\$8 00
Senovia	F. M. Slaughter	Chino	---\$5 00
CLASS II—FAMILIES.			
Nellie and colts	John Ralston	El Monte	---\$15 00
Clark, Jr. and colts	H. S. Preston	Downey	---\$20 00
No Name and colts	B. Walton	Compton	---\$8 00
Conqueror and colts	C. C. Cheney	Downey	---\$20 00
— and colts	I. G. Denman	Norwalk	---\$8 00
CLASS III—GRADED HORSES.			
Young Alf	Thos. Canavan	Downey	---\$10 00
Falcon	Geo. Carson	Compton	---\$20 00
Purly	J. B. Pierce	Downey	---\$10 00
Too Soon	Clark Bros.	Downey	---\$10 00
Harry Gage	N. A. Covarrubias	Los Angeles	---\$8 00
Rory O'More	Geo. Hinds	Wilmington	---\$10 00
John S	J. P. Bonalli	Compton	---\$5 00
Billy K	Chas. Thayer	Downey	---\$5 00
Jennie Lewis	E. C. Parrish	Santa Monica	---\$15 00
Sac. Belle	M. F. Tarble	Los Angeles	---\$10 00
Georgia	Geo. Hinds	Wilmington	---\$12 00
Sister J	Chas. Thayer	Downey	---\$8 00
—	B. Walton	Compton	---\$10 00
O K	Thos. Canavan	Downey	---\$5 00
CLASS IV—DRAFT HORSES.			
Duke	Jas. Roberts	Irvington	---\$15 00
Guard	S. B. Weller	Tustin	---\$10 00
—	Clydesdale Assn.	Downey	---\$10 00
Duke, Jr.	B. Walton	Compton	---\$6 00
Prince	Jas. Roberts	Irvington	---\$7 00
Sally and Kit	C. A. Coffman	Ranchito	---\$16 00
Rhet	J. Y. Saviers	Hueneme	---\$12 00
—	E. L. Barnett	Downey	---\$13 00
Puss	F. L. Gim	Downey	---\$8 00
SADDLE HORSES.			
Jack	A. Lugo	San Antonio	---\$5 00
—	T. Smith	Downey	---\$5 00
—	F. A. Coffman	Ranchito	---\$7 00
CLASS V—ROADSTERS.			
Connor	John Ralston	El Monte	---
Fargo	John Sheick	Los Angeles	---
Oscar Steinway	J. A. Wilkes	Santa Ana	---\$20 00
Dashwood	Geo. Hinds	Wilmington	---
Garnet	A. Rose	Machado	---
Jack Hill	John Gries	Compton	---\$15 00
Col. Thomas	C. R. Paris	Downey	---\$8 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Mark Twain.....	John Gries.....	Compton.....	\$10 00
John Delaney.....	Ed R. Smith.....	Los Angeles.....	\$8 00
Unknown.....	T. J. Kerns.....	Downey.....	\$8 00
MARES.			
Carrie B.....	J. A. Wilkes.....	Santa Ana.....	\$20 00
Georgia.....	Geo. Hinds.....	Wilmington.....	\$15 00
CLASS VI—CARRIAGE TEAMS.			
Prince and King.....	P. L. Budinger.....	Los Angeles.....	\$20 00
Lulu and Kitty.....	T. H. Reynolds.....	Los Angeles.....	.....
Nick and Bird.....	F. Adam.....	Los Angeles.....	.....
.....	F. Arnold.....	Stockton.....	.....
Baldy and Jack.....	T. S. Cheney.....	Downey.....	\$10 00
.....	John Burcham.....	San Bernardino.....	.....
CLASS VII—ROADSTER TEAMS.			
Lucky and Rowland.....	N. A. Covarrubias.....	Los Angeles.....	\$25 00
.....	Walter Vail.....	Los Angeles.....	.....
CLASS VIII—GENERAL PURPOSE HORSES.			
Snowball.....	John Ralston.....	El Monte.....	.....
Chief of Echoes.....	William Smith.....	Los Angeles.....	.....
.....	J. H. Lehigh.....	Los Angeles.....	.....
CLASS IX—COLTS.			
Lightfoot.....	John Ralston.....	El Monte.....	.....
Leon.....	J. Y. Saviers.....	Hueneme.....	\$5 00
Bunt.....	A. E. Davis.....	Downey.....	\$5 00
.....	M. N. Newmark.....	Compton.....	\$10 00
.....	Frank Trapp.....	Los Angeles.....	\$7 00
.....	C. A. Coffman.....	Ranchito.....	\$6 00
Tono.....	N. A. Covarrubias.....	Los Angeles.....	\$8 00
.....	M. Luper.....	Downey.....	\$5 00
Ruth P.....	E. C. Parrish.....	Santa Monica.....	\$5 00
EXTRA CLASS—JACKS.			
Young Sampson.....	F. M. Slaughter.....	Chino.....	\$10 00
SWEEPSTAKES—STALLIONS.			
Bachelor.....	John Gries.....	Compton.....	\$20 00
Leon.....	J. Y. Saviers.....	Hueneme.....	.....
Dashwood.....	George Hinds.....	Wilmington.....	.....
Rory O'More.....	George Hinds.....	Wilmington.....	\$5 00
Snowball.....	John Ralston.....	El Monte.....	.....
Grover Cleveland.....	Matt. Storns.....	Oakland.....	\$10 00
MARES.			
Georgia.....	George Hinds.....	Wilmington.....	.....
Jennie Lewis.....	E. C. Parrish.....	Santa Monica.....	\$10 00
Narcola.....	Matt. Storns.....	Oakland.....	\$20 00
PONY TEAMS.			
Brown Shetlands.....	J. W. Gardner.....	Los Angeles.....	.....
White geldings.....	L. J. Rose.....	San Gabriel.....	.....
LADIES' EQUESTRIANSHIP.			
.....	Mrs. Ida Bailey.....	San Francisco.....	\$50 00
.....	Miss Irene Savage.....	Los Nietos.....	\$25 00
.....	Miss L. C. Perkins.....	Santa Fe Springs.....	\$15 00
.....	Miss Sarah Baker.....	Norwalk.....	\$10 and Diploma.
SPECIAL PREMIUM—BEST JOCKEY RIDER.			
.....	Leo Newell.....	Oakland.....	\$100 00
.....	Chas. Gaby.....	Los Angeles.....	\$50 00
BEST GENTLEMAN RIDER.			
.....	Louis Lopez (Mex- ican style).....	Machado.....	\$20 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—DURHAM CATTLE.			
Bull, aged, Major C	E. C. Cranston	Downey	\$20 00
Bull, one year, Bernardino Wiley	C. B. Woodhead	Norwalk	\$13 00
Bull calf	C. B. Woodhead	Norwalk	\$8 00
Bull calf, Charley C	C. A. Coffman	Ranchito	\$6 00
Cow, three years, Airdres Cherry 2d	C. B. Woodhead	Norwalk	\$25 00
Cow, two years, Bernadino Admiral	C. B. Woodhead	Norwalk	\$20 00
Cow, one year, Airdres Cherry 7th	C. B. Woodhead	Norwalk	\$8 00
Heifer calf, Annie C	C. A. Coffman	Ranchito	\$6 00
CLASS II—JERSEY CATTLE.			
Cow, two years, Nonentity	C. B. Woodhead	Norwalk	
Cow, three years, Yoncaipe	C. B. Woodhead	Norwalk	\$20 00
Bull, aged, Ashante Sultan	C. B. Woodhead	Norwalk	\$20 00
Bull calf, Bo Peep	C. B. Woodhead	Norwalk	\$5 00
CLASS III—HOLSTEIN CATTLE.			
Bull, aged, Rutlich	G. D. Whitcomb	Glendora	
Bull, aged, McKenzie	G. J. Griffith	Los Angeles	\$20 00
Bull, two years, Barney C	T. D. Cheney	Downey	\$8 00
Cow, aged, Lulu C	T. D. Cheney	Downey	\$10 00
Cow, aged, Alma D	T. D. Cheney	Downey	\$5 00
Cow, two years, Arnot F	T. D. Cheney	Downey	\$8 00
Cow, one year, Petra C	T. D. Cheney	Downey	\$6 00
Cow, one year, Effie D	T. D. Cheney	Downey	\$3 00
Suckling heifer, Olla C	T. D. Cheney	Downey	\$4 00
Suckling heifer, Ora C	T. D. Cheney	Downey	\$2 00
Herd (Holstein), bull and three cows	T. D. Cheney	Downey	\$15 00
Herd (Jersey), aged, bull and four cows	C. B. Woodhead	Norwalk	\$30 00
Herd (Durham), aged, bull and four cows	C. B. Woodhead	Norwalk	\$30 00
Herd (Jersey), young, bull and two cows	C. B. Woodhead	Norwalk	\$15 00
Herd (Holstein), young, bull and two cows	T. D. Cheney	Downey	\$15 00
Special, cattle, bull and six cows	C. B. Woodhead	Norwalk	\$20 00
SPECIAL PREMIUMS.			
Devon bull, Buffalo T	J. D. Whitcomb	Downey	\$10 00
Bull calf	T. J. Kerns	Downey	\$4 00
Bull calf	J. G. Chapman	Santa Fe Springs	\$6 00
SWEPESTAKES—CATTLE.			
Bull, Ashantee Sultan	C. B. Woodhead	Norwalk	\$30 00
Bull, Alta 4th	T. J. Kerns	Downey	\$13 00
Cow, Airdres Cherry 2d	C. B. Woodhead	Norwalk	\$20 00
GRADED CATTLE.			
Cow, three years	C. A. Coffman	Ranchito	\$8 00
Heifer calf	C. A. Coffman	Ranchito	\$3 00
CLASS I—HOGS—BERKSHIRE.			
Pair of pigs, six months and over, Bill and Bill C	John B. Marine	Manchester	\$20 00
Boar, one year and over, John Goodwin	John B. Marine	Manchester	\$10 00
Sow and six pigs	John B. Marine	Manchester	\$20 00
CLASS II—CHESTER WHITES.			
Pair of pigs, six months and over	John B. Marine	Manchester	\$20 00
Boar, any age, John Goodwin	John B. Marine	Manchester	\$20 00
Sow, any age	John B. Marine	Manchester	\$10 00
Display of pigs	John B. Marine	Manchester	\$13 00
POULTRY.			
One coop of White Leghorns	J. D. James	Downey	\$2 00
One coop of Brown Leghorns	J. D. James	Downey	\$2 00
One coop of Plymouth	J. D. James	Downey	\$2 00
MISCELLANEOUS.			
One pen of six Guinea pigs	Walter Pratt	Downey	\$2 00
One pen of rabbits	John Hammerton	Downey	\$2 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—AGRICULTURAL MACHINERY.			
Steam ditching machine	C. Cook	Los Angeles	Diploma.
Hay and straw cutter	H. Geise	Los Angeles	Diploma.
Hand corn sheller	H. Geise	Los Angeles	Diploma.
Mowing machine (Woods & Deering's Giant)	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Three harrows	H. Geise	Los Angeles	Diploma.
Horse cultivator	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Tongueless cultivator	H. Geise	Los Angeles	Diploma.
CLASS IV—HOUSEHOLD IMPLEMENTS.			
Fruit drier	T. C. Walter	Los Angeles	Diploma.
Water filter	T. C. Walter	Los Angeles	Diploma.
CLASS V—PLOWS.			
Gang plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Sulky plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Iron beam plow	H. Geise	Los Angeles	Diploma.
Steel plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Steel plow	H. Geise	Los Angeles	Diploma.
Chilled plow	H. Geise	Los Angeles	Diploma.
Chilled plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Grading plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Sidehill plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
General purpose plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
California made plow	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
CLASS VI—VEHICLES.			
Panel-back surrey	H. D. Gates & Co.	Los Angeles	\$5 and Diploma.
Top buggy	H. D. Gates & Co.	Los Angeles	Diploma.
Piano-box open buggy	H. D. Gates & Co.	Los Angeles	Diploma.
Lewis spring buggy	H. D. Gates & Co.	Los Angeles	Diploma.
Surrey	H. Geise	Los Angeles	Diploma.
Top buggy	H. Geise	Los Angeles	Diploma.
Speeding wagon	H. Geise	Los Angeles	Diploma.
Spring wagon	H. Geise	Los Angeles	Diploma.
General purpose farm wagon	Richardson, Kim- ball & Co.	Los Angeles	Diploma. and \$20
Road cart (Frazier)	Myron F. Tarble	Los Angeles	Diploma.
Pleasure cart	Myron F. Tarble	Los Angeles	Diploma.
Track sulky	Myron F. Tarble	Los Angeles	Diploma.

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II—FINE ARTS.			
Kensington work in silk, table cover, etc.	Mrs. L. A. Smith.	Los Angeles	\$2 00
Kensington, crewel, towels	Mrs. R. P. Ingram.	Los Angeles	
Kensington, crewel, laprobe	Miss Nellie Johnson	Gladstone	\$4 50
Kensington, crewel, sideboard cover	Mrs. L. A. Smith.	Los Angeles	
Arasene work, sofa pillow	Mrs. May F. Clayton	Los Angeles	\$2 50
Arasene work, table scarf	Mrs. L. A. Smith.	Los Angeles	\$2 00
Arasene work, lambrequin	Miss A. Hixson	Los Angeles	
Arasene work, broom holder	Mrs. W. M. Bufington	Los Angeles	\$1 00
Chenille work, pincushion	Mrs. R. P. Ingram.	Los Angeles	\$1 00
Art ribbon work, handkerchief case	Mrs. L. A. Smith.	Los Angeles	\$2 00
Embossed mirror frame	Mrs. Owen	Los Angeles	\$1 00
Etching, two tidies, two banners, six napkins	Mrs. R. P. Ingram.	Los Angeles	\$1 00
Etching, two pillow shams, two doylies	Miss Lottie Doan	Los Angeles	
Etching, easel drape, linen doylies	Mrs. L. A. Smith.	Los Angeles	
Etching, splasher	Mrs. W. M. Bufington	Los Angeles	
Etching, 5 o'clock tea cloth	Mrs. L. A. Smith.	Los Angeles	
Satin stitch handkerchiefs	Mrs. R. P. Ingram.	Los Angeles	\$1 00
Two pieces tapestry, one tidy	Mrs. R. P. Ingram.	Los Angeles	
One tidy	Mrs. W. M. Bufington	Los Angeles	\$1 00
Two pincushions	Mrs. R. P. Ingram.	Los Angeles	\$2 00
Two infants' flannel embroidered skirts	Mrs. L. W. Holmes	Los Angeles	\$1 00
One half dozen silk embroidered handkerchiefs	Mrs. R. P. Ingram.	Los Angeles	\$1 00
Punta tirato handkerchief	Miss A. Hixson	Los Angeles	\$2 00
Sideboard scarf and six handkerchiefs	Mrs. Jane W. Howard	Los Angeles	\$2 00
One pair braided pillow shams	Mrs. W. M. Bufington	Los Angeles	\$1 00
Embroidered fire screen	Mrs. Wood	Los Angeles	\$2 00
Embroidered banner	Mrs. May F. Clayton	Los Angeles	\$1 00
Embroidered ottoman	Mrs. B. A. Messenger	Los Angeles	
Embroidered ottoman cover	Miss A. Hixson	Los Angeles	\$1 00
Embroidered ottoman cover	Mrs. C. V. R. Davis.	Los Angeles	
Embroidered sofa cushion	Miss B. D. Lothian	Los Angeles	\$2 00
Table scarf	Mrs. L. A. Smith.	Los Angeles	
Table scarf	Mrs. Wood	Los Angeles	\$2 00
Patchwork quilt	Mrs. B. A. Messenger	Los Angeles	\$2 00
Lambrequin	Mrs. Owen	Los Angeles	\$1 00
Lambrequin	Mrs. C. V. R. Davis.	Los Angeles	\$2 00
Silk quilt	Mrs. R. P. Ingram.	Los Angeles	\$2 00
Crazy quilt	Mrs. Caroline Mead	Anaheim	\$2 00
Crazy quilt	Mrs. Clara Caldwell	San Jacinto	\$2 00
Crazy quilt	Mrs. W. W. Phelps.	Los Angeles	\$2 00
Crazy quilt	Mrs. Nina McKenzie	Los Angeles	\$2 00
Crazy quilt	Mrs. M. A. Martin.	Los Angeles	
Crazy quilt	Mrs. L. A. Smith.	Los Angeles	\$2 00
Eight pieces crochet work	Mrs. Lottie G. Doan	Los Angeles	
Crochet skirt	Mrs. S. Schallmo.	Los Angeles	\$1 50
Table cover	Mrs. L. Becker.	Los Angeles	
Tidy	Miss Josie Spiker	Los Angeles	
Crochet carriage afghan	Mrs. Jane W. Howard	Los Angeles	\$2 00
Four patterns of lace	Mrs. S. Schallmo.	Los Angeles	\$2 00
Quilt in crochet	Mrs. C. Garnier	Los Angeles	\$2 00
Quilt in crochet	Mrs. G. W. Fisher.	Los Angeles	

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Quilt in crochet	Miss C. Fisher	Los Angeles	\$2 00
Eight pieces fancy crochet lace.....	Miss Lottie G. Doan	Los Angeles	\$2 00
Two silk knit purses	Miss Alice Hixson	Los Angeles	\$2 00
Two point lace collars	Mrs. J. S. Johnson	Los Angeles	\$2 00
Honiton lace handkerchief.....	Mrs. M. Bellville	Los Angeles	\$2 00
Netted table cover.....	Mrs. G. W. Fisher	Los Angeles	\$1 00
Three pieces darned netting.....	Mrs. R. P. Ingram	Los Angeles	
Two pieces darned netting	Mrs. W. M. Bufington	Los Angeles	\$1 00
Painted toilet set.....	Mrs. May F. Clayton	Los Angeles	\$2 00
Painted tidy	Mrs. W. M. Bufington	Los Angeles	
Bunting tidy	Mrs. Owen	Los Angeles	\$1 00
Infant's outfit	Mrs. R. P. Ingram	Los Angeles	\$5 00
Two pieces of macrame	Mrs. R. P. Ingram	Los Angeles	\$1 00
Specimens of moss and shell work	Westover & Campbell	Los Angeles	
Three wreaths of shell work	Mrs. J. McIlmoil	Los Angeles	\$2 00
Two specimens of beadwork	Miss A. Lichtenberger	Los Angeles	\$5 and Diploma.
Hair wreath.....	Mrs. A. C. Doan	Los Angeles	
Hair wreath.....	Mrs. J. McIlmoil	Los Angeles	\$1 00
Waxwork	Mme. Delabarre	Los Angeles	\$2 00
Art flowers.....	Mrs. W. M. Bufington	Los Angeles	\$1 00
Forty cards of pressed flowers and ferns.....	Mrs. M. B. De Camp	Los Angeles	\$3 00
Cabinet of minerals	Westover & Campbell	Los Angeles	\$10 00
California minerals and petrifications.....	E. T. McGinnis & Co.	Los Angeles	\$15 00
Sixty-four cards of autumn leaves and grasses	Mrs. M. B. De Camp	Los Angeles	\$10 00
Hand-made rug	Mrs. B. A. Messenger	Los Angeles	\$2 00
Rickrack quilt.....	Mrs. C. M. Smith	Los Angeles	\$5 00
Easel drape.....	Mrs. L. A. Smith	Los Angeles	\$1 00
Cotton embroidered underwear.....	Mrs. W. M. Bufington	Los Angeles	
Knitted nubia.....	Mrs. Wood	Los Angeles	
Knitted child's shirt.....	Mrs. Jane W. Howard	Los Angeles	\$2 00
Worsted wreath	Mrs. J. A. Cloe	Los Angeles	\$2 00
Knitted hood, sack, and socks	Miss G. Grelck	Los Angeles	\$4 00
Crochet quilt	Mme. Marie Lue	Los Angeles	\$2 00
Scarf	Miss Jennie Grelck	Los Angeles	\$1 00
Chair back	Miss Hattie Smith	Anahim	\$2 00
Crazy quilt	Miss Ella Gardner	Los Angeles	\$2 50
Braided nightdress	Miss Blanche Bufington	Los Angeles	\$1 00
Two oil paintings.....	Albert Garey	Los Angeles	\$1 00
Drawings	Eddie Glover	Los Angeles	\$1 00
Zephyr flowers	Miss Minnie Everts	Los Angeles	\$1 00
CLASS III.			
Marine paintings on jugs	Miss B. Wheeler	Los Angeles	\$2 50
Old mill in winter	Mrs. M. Plummer	Los Angeles	
Three landscapes.....	Mrs. Geo. E. Pillsbury	Los Angeles	\$5 00
Animal painting in oil	Mme. Delabarre	Los Angeles	\$5 00
"Puss in Heaven and Golden Pig"	D. A. Stern	Los Angeles	\$2 50
Flowers on canvas in oil	Mme. Delabarre	Los Angeles	\$2 00
Decorative painting, handkerchief case	Mrs. Carnier	Los Angeles	
Wall banner	Miss B. Wheeler	Los Angeles	
Tambourine.....	Mrs. W. M. Bufington	Los Angeles	\$2 00

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Two decorative plaques.....	Mrs. G. E. Pillsbury	Los Angeles	.....\$2 00
Wall banner.....	Mrs. Jane W. Howard	Los Angeles	.....\$1 00
Two banners.....	Mrs. M. A. Page	Pomona	.....\$3 00
Wall banner.....	Miss Jane Spiker	Los Angeles	.....Ex. only.
Wall banner.....	Mrs. B. A. Morgan	Los Angeles	.....\$2 00
Painting on bolting cloth.....	Mrs. L. A. Smith	Los Angeles	.....\$2 00
Three crayon portraits.....	Miss B. Wheeler	Los Angeles	.....\$2 50
Two samples of stamping.....	Mrs. L. A. Smith	Los Angeles	.....\$1 00
Pastelle work, dog.....	Mrs. W. M. Bufington	Los Angeles	.....\$2 00
Autumn scene, Merrimac River.....	Mrs. G. E. Pillsbury	Los Angeles	.....\$1 00
Peonies.....	Mrs. G. E. Pillsbury	Los Angeles	.....\$1 00
Panel.....	Mrs. M. A. Page	Pomona	.....
Panel.....	Mme. Delabarre	Los Angeles	.....
Panel, roses.....	M. S. Baker	Los Angeles	.....
Two plaques.....	Mrs. Geo. E. Pillsbury	Los Angeles	.....\$1 00
One plaque.....	Mrs. M. A. Page	Pomona	.....\$1 00
One lambrequin, luster painting.....	Mrs. Jermain	Los Angeles	.....
Banner, luster painting.....	Mrs. W. M. Bufington	Los Angeles	.....\$1 00
Plush, luster painting.....	Mrs. C. V. R. Davis	Los Angeles	.....
Cup and saucer, porcelain painting.....	Mrs. W. M. Bufington	Los Angeles	.....\$2 00
One head and plaque, en repose.....	Mrs. N. L. Holmes	Los Angeles	.....\$2 00
Pictures in oil and pearl.....	Mme. Delabarre	Los Angeles	.....
Head in bas relief.....	Miss B. Wheeler	Los Angeles	.....
California game in oil, from nature.....	Mme. Delabaire	Los Angeles	.....\$5 00
Graining, on stand.....	Ph. Braun	Los Angeles	.....\$5 and Diploma.
California fruit, in oil.....	Mme. Delabarre	Los Angeles	.....
California fruit, in oil.....	Mrs. M. Plummer	Los Angeles	.....
California fruit, in oil.....	Miss B. Wheeler	Los Angeles	.....
Fine bookbinding and blank-book ruling.....	Pridham Bros.	Los Angeles	.....Diploma.
Model, in clay.....	Mme. Delabarre	Los Angeles	.....Diploma.
Statuary, in terra cotta.....	Mme. Delabarre	Los Angeles	.....Diploma.
Display of harness and turf goods.....	Myron F. Tarble	Los Angeles	.....\$10 and Diploma.
Display of boots and shoes.....	Louis Brothers	Los Angeles	.....\$10 00
Display of boots and shoes.....	C. D. Fisher	Los Angeles	.....\$15 and Diploma.
Display of boots and shoes.....	Joseph Mesner	Los Angeles	.....
Display of fancy articles.....	Mrs. Jane Williams	Downey	.....\$5 00
Display of fancy needlework.....	Miss Ella Gardner	Anaheim	.....\$5 00
Display of millinery.....	Mrs. Sue Huff	Downey	.....\$5 00
Display of needlework by young miss.....	Miss Bertie East	Downey	.....\$2 00
Table cover by miss.....	Miss Clara Legg	Downey	.....\$5 00
Handsome display of needlework.....	Miss Anna Clawthorn	Downey	.....\$5 00
BABY SHOW.			
Blanch, one year old.....	Mrs. M. F. Shepherd	Los Angeles	.....
Ethel Maude, fourteen months old.....	Mrs. R. P. Ingram	Los Angeles	.....\$10 00
Mabel, fourteen months old.....	Mrs. Jennie Adams	Downey	.....
Bessie May, two months old.....	Mrs. H. D. Calvert	Downey	.....
Susan Millah, fourteen months old.....	Mrs. W. B. Salmon	Los Angeles	.....
Esther Belle, four months old.....	Mrs. B. Dick	Los Angeles	.....
Mary and Martha (twins), twelve months old.....	Mrs. Theo. Lillian	Los Angeles	.....\$20 00
Bertha, six months old.....	Mrs. Marie Forsythe	Westminster	.....
Sophia, three months old.....	Mrs. Sophia Kurbach	Los Angeles	.....
Arthur Roy, eight months old.....	Mrs. W. M. Lee	Los Angeles	.....\$20 00

THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Johnnie, six months old.....	Mrs. J. W. Jones.....	Los Angeles.....	
Idella French, one year old.....	Mrs. Zora Grider.....	Downey.....	\$15 00
Dora, fifteen months old.....	Mrs. Nannie Click.....	Downey.....	
MISCELLANEOUS.			
Exhibit of dried berries.....	A. Smith.....	Gladstone.....	\$5 00
Green and canned citron.....	Mrs. A. Becket.....	Westminster.....	\$2 50
Five pounds of dried peas.....	John M. Morris.....	San Bernardino.....	\$5 00
Largest display of raisins.....	S. H. Barrett.....	San Bernardino.....	\$20 00
Field cornstocks, popcorn.....	Geo. M. Teel.....	Westminster.....	Diploma.
Display of glass and tin goods.....	Alex. Graham.....	Los Angeles.....	Diploma.
Flower, corn and egg vine.....	Geo. Waters.....	Westminster.....	Diploma.
Sorghum cane.....	J. Y. Anderson.....	Westminster.....	Diploma.
Peanuts on vine.....	S. W. Hadley.....	Westminster.....	Diploma.
Display of canned goods.....	Mrs. H. S. Flora.....	Downey.....	\$5 00

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—APPLES, ETC.			
Best and largest display of apples.....	M. J. McGaugh.....	Downey.....	\$5 00
Best six varieties of apples.....	M. J. McGaugh.....	Downey.....	
Six varieties of apples.....	J. W. McKellar.....	Downey.....	
Six varieties of apples.....	J. R. Manning.....	Downey.....	\$8 00
Six varieties of apples.....	G. D. Bunch.....	Downey.....	
Six varieties of apples.....	Mrs. Jos. Trefether.....	Westminster.....	
Nine varieties of apples.....	J. Clay.....	Downey.....	
Nine varieties of apples.....	J. H. Martin.....	Downey.....	\$5 00
Nine varieties of apples.....	S. Lyman.....	Westminster.....	\$10 00
Three varieties of apples.....	James Stewart.....	Downey.....	\$3 00
Three varieties of apples.....	D. P. Kendrick.....	Downey.....	
Three varieties of apples.....	G. D. Bunch.....	Downey.....	
Three varieties of apples.....	Wm. Mellet.....	Westminster.....	\$5 00
Two varieties of apples.....	Cocke & Johnson.....	Downey.....	\$2 00
Two varieties of apples.....	E. R. Thompson.....	Azusa.....	\$3 00
General display of apples.....	F. F. Culver.....	Compton.....	\$5 00
Twenty-eight plates of apples, fruit, etc., and vegetables raised without irriga- tion.....	Lankerskim Ra'ch Company.....	S. Fernando Val.....	Ex. only.
PEARS.			
General display and six varieties of pears.....	M. J. McGaugh.....	Downey.....	\$10 00
Six varieties of pears.....	Mrs. Jos. Trefether.....	Westminster.....	\$10 00
Three varieties of pears.....	James Stewart.....	Downey.....	\$3 00
Three varieties of pears.....	S. W. Hadley.....	Westminster.....	
Three varieties of pears.....	J. Clay.....	Downey.....	\$8 00
Two varieties of pears.....	J. Clay.....	Downey.....	\$5 00
Two varieties of pears.....	O. J. Buck.....	Westminster.....	
PLUMS.			
General display of plums.....	G. D. Bunch.....	Downey.....	\$5 00
QUINCES.			
Best display of quinces.....	Ed. F. Scribner.....	Downey.....	\$2 00
General display of quinces.....	Mrs. George Dye.....	Los Angeles.....	
Display of quinces.....	O. J. Buck.....	Westminster.....	\$3 00
SEMI-TROPICAL FRUITS.			
Four varieties of persimmons.....	W. B. Lampson.....	Westminster.....	\$15 00
Best and largest display of oranges.....	Henry Claussen.....	Cahuenga.....	\$15 00
Single variety of oranges.....	Henry Claussen.....	Cahuenga.....	\$5 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Two varieties of lemons.....	Henry Claussen.....	Cahuenga.....	\$8 00
Single variety of lemons.....	Henry Claussen.....	Cahuenga.....	\$5 00
Three varieties of oranges.....	W. B. Lampson.....	Westminster.....	.....
Variety of lemons.....	W. B. Lampson.....	Westminster.....	\$10 00
Variety of lemons.....	James Stewart.....	Downey.....	.....
Twelve varieties of table grapes.....	James Stewart.....	Downey.....	\$15 00
Nine varieties of table grapes.....	James Stewart.....	Downey.....	\$5 00
Three varieties of table grapes.....	James Stewart.....	Downey.....	\$2 00
Raisin grapes.....	James Stewart.....	Downey.....	\$3 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—MISCELLANEOUS FRUITS.			
Three varieties of lemons.....	J. W. Cate.....	Downey.....	\$3 00
Display of peaches.....	H. Hood.....	Downey.....	\$3 00
Single variety of pears.....	H. Hood.....	Downey.....	\$1 00
Single variety of oranges.....	H. Hood.....	Downey.....	\$1 00
Six varieties of apples, not classed.....	T. J. Kerns.....	Downey.....	\$3 00
Large display of oranges.....	H. L. Montgomery.....	Downey.....	\$5 00
Three varieties of oranges.....	H. L. Montgomery.....	Downey.....	\$2 00
Pomegranates.....	Willie Julian.....	Downey.....	\$2 00
Best three varieties of lemons.....	Ed. Barnett.....	Downey.....	\$5 00
Best one variety of lemons.....	Ed. Barnett.....	Downey.....	\$1 00
Best six varieties of grapes.....	Ed. Barnett.....	Downey.....	\$3 00
Best single variety of grapes.....	Ed. Barnett.....	Downey.....	\$2 00
Artistic arrangement and display.....	Ed. Barnett.....	Downey.....	\$5 00
CLASS II.			
Ornamental trees and shrubbery.....	Mrs. L. J. Garey.....	Los Angeles.....	\$10 00
Semi-tropical trees from nursery.....	Mrs. L. J. Garey.....	Los Angeles.....	\$20 00
CLASS III—THE APIARY.			
Best swarm of bees.....	C. N. Wilson.....	San Fernando.....	\$10 00
Ten pounds of comb honey.....	C. N. Wilson.....	San Fernando.....	\$10 00
Ten pounds of extracted honey.....	C. N. Wilson.....	San Fernando.....	\$10 00
Ten pounds of beeswax.....	C. N. Wilson.....	San Fernando.....	\$5 00
Best and largest display of honey.....	C. N. Wilson.....	San Fernando.....	\$15 00
Comb foundation.....	C. N. Wilson.....	San Fernando.....	\$5 00
Display of apicultural implements.....	C. N. Wilson.....	San Fernando.....	Diploma.
CLASS IV—NUTS, ETC.			
Hard-shell English walnuts.....	O. P. Passons.....	Downey.....	\$2 00
Soft-shell English walnuts.....	H. L. Montgomery.....	Downey.....	\$3 00
Peck of English walnuts.....	R. B. Arey.....	Downey.....	\$5 00
English walnuts.....	E. H. Boyd.....	Downey.....	.....
Black walnuts.....	J. W. Fawcett.....	Westminster.....	\$2 00
CLASS V—DRIED FRUIT.			
Dried apricots.....	W. M. Muller.....	Downey.....	\$5 00
Dried peaches.....	W. M. Muller.....	Downey.....	\$2 00
Dried prunes.....	W. M. Muller.....	Downey.....	\$2 00
Dried pears.....	Mrs. T. R. Passons.....	Downey.....	\$2 00
Display of jellies.....	Mrs. T. R. Passons.....	Downey.....	\$5 00
Display of pickles.....	Mrs. W. H. Morrow.....	Downey.....	\$2 00
CLASS VI—THE DAIRY.			
Twelve pounds butter.....	Matt. Rogers.....	Westminster.....	\$10 00
Display of butter.....	T. J. Kerns.....	Downey.....	\$4 00
Two rolls butter.....	T. J. Kerns.....	Downey.....	\$2 00

FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS VII—DOMESTIC DEPARTMENT.			
Display of biscuit	Mrs. E. F. Scribner	Downey	\$2 00
Corn bread	Mrs. E. F. Scribner	Downey	\$2 00
Brown bread	Mrs. E. F. Scribner	Downey	\$2 00
Wheat bread	Mrs. E. F. Scribner	Downey	\$2 00
General display of bread	Mrs. E. F. Scribner	Downey	\$3 00
Domestic bread	Mrs. M. F. Shepherd	Los Angeles	\$5 00
Domestic brown bread	Mrs. M. F. Shepherd	Los Angeles	\$5 00
Domestic corn bread	Mrs. M. F. Shepherd	Los Angeles	\$5 00
Domestic biscuit	Mrs. M. F. Shepherd	Los Angeles	\$2 50
Display of cake	Mrs. M. F. Shepherd	Los Angeles	Cakebskt.
Soda biscuit	Miss Mary Stenson	Los Angeles	\$2 50
White bread by a miss under sixteen	Miss Mabel Doan	Los Angeles	\$5 00
Plain cake by a miss under sixteen	Miss F. Longley	Los Angeles	\$5 00
Soda biscuit	Miss L. G. Doan	Los Angeles	\$2 00
White cake	Miss N. Graham	Downey	\$1 00
Largest display of cake	Mrs. F. L. Gum	Downey	\$5 00
Five varieties of cake (special premium)	Miss Ava Hunt	Downey	\$5 00
CLASS VIII.			
Display of sewing machine, "The White"	W. T. Somes, agent	Los Angeles	Diploma.
Best and most artistic display of sewing machine work done on the ground	W. T. Somes, agent	Los Angeles	Diploma.
Display of sewing machines	Davis Sewing Machine Co.	Los Angeles	Diploma.
Most artistic display of sewing machine work	Davis Sewing Machine Co.	Los Angeles	Diploma and \$5 00
Largest variety of pansies	Mrs. L. J. Garey	Los Angeles	\$3 00
Largest display of pinks	Mrs. L. J. Garey	Los Angeles	\$3 00
Largest and best display of roses	Mrs. L. J. Garey	Los Angeles	\$10 00
Handsome floral display from one vicinity	Mrs. L. J. Garey	Los Angeles	\$25 00
CLASS IX.			
Twenty pounds barley	John Kane	Gladstone	\$5 00
Twenty pounds alfalfa seed	John Kane	Gladstone	\$5 00
Thirty pounds corn	John H. Edwards	Westminster	\$3 00
Large yellow corn	T. L. Gooch	Downey	\$3 00
Small yellow corn	T. L. Gooch	Downey	\$3 00
One hundred pounds flour	Sperry & Co.	Stockton	\$5 00
Display of pumpkins	L. M. Grider	Downey	\$5 00
Largest display of pumpkins	J. J. McLellan	Downey	\$3 00
Largest pumpkin	O. P. Passons	Downey	\$2 00
One half bushel red potatoes	E. S. House	Westminster	\$5 00
One half bushel white potatoes	E. S. House	Westminster	\$5 00
Small display of red potatoes	J. J. McLellan	Downey	\$2 00
Small display of white potatoes	J. J. McLellan	Downey	\$1 00
Display of other variety of potatoes	C. A. Cooper	Westminster	\$3 00
Greatest variety of potatoes	E. S. House	Westminster	\$5 00
One half bushel sweet potatoes	O. J. Buck	Westminster	\$5 00
One half bushel yellow sweet potatoes	T. L. Gooch	Downey	\$1 00
Display of white corn	H. H. Stevenson	Downey	\$3 00
Corn on stalk	H. Hood	Downey	\$3 00
Amber cane	E. L. Barnett	Westminster	\$2 00
Best tomatoes	H. L. Montgomery	Downey	\$1 00
Best display of tomatoes	H. Hood	Downey	\$2 00
Best red peppers	H. Hood	Downey	\$1 00
Best cucumbers	M. J. McGaugh	Downey	\$1 00
Best red beets	E. C. Cranston	Downey	\$2 00
Best six long blood beets	S. Lyman	Westminster	\$2 00
Best six sugar beets	S. Lyman	Westminster	\$2 00
Best twelve carrots	J. B. Moulin	Westminster	\$2 00

FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best drumhead cabbage	J. Y. Anderson	Westminster	\$2 00
Display of red onions	E. S. House	Westminster	\$2 00
One half dozen hubbard squashes	S. Lyman	Westminster	\$2 00
One half dozen other varieties squashes	J. B. Molin	Westminster	\$2 00
Three watermelons	L. M. Grider	Downey	\$2 00
Peck of white beans	A. Smith	Gladstone	\$2 00
Peck of peas	A. Smith	Gladstone	\$2 00
Greatest variety of peas	John Kane	Downey	\$2 00
Two varieties of radishes	C. W. Cooper	Westminster	\$1 00
CLASS X—MISCELLANEOUS.			
One case hand-made horseshoes	J. P. Browne	Santa Ana	Diploma.
Display of drygoods	J. W. Robinson	Los Angeles	\$20 and Diploma.
Royal Parisian luster	Daw, Kerrell & Bailey	San Francisco	Diploma.
Display of bottled and keg beer	Fredricksburg Brewing Co.	San José	Diploma.
Continental currency	I. S. Smith	Los Angeles	Diploma.
Display of farming tools, wagons, etc.	Richardson, Kim- ball & Co.	Los Angeles	Diploma.
Display of proprietary medicines	Creasinger & Co.	Los Angeles	Diploma.
Collection of currency and coin	A. H. Longley	Los Angeles	Diploma.
Paper boxes	Pridham Bros.	Los Angeles	Diploma.
Display of luster painting	Mrs. J. R. Espey	Los Angeles	Diploma.
Display of furniture	Los Angeles Fur- niture Co.	Los Angeles	\$75 and Diploma.
Display of mantels	Los Angeles Man- tel Co.	Los Angeles	Diploma.
Display of Indian curios	U. Fuller	Gladstone	\$20 and Diploma.
Gents' furnishing goods	Evans & Connell	Los Angeles	Diploma.
Adjustable folding chair	N. B. Harmon	San Francisco	Diploma.
Display of rubber stamps	Los Angeles Rub- ber Stamp Co.	Los Angeles	Diploma.
Display of bicycles	R. C. Woodworth	Los Angeles	\$15 and Diploma.
Display of home-made candies	S. E. Douglas	Los Angeles	Diploma.
Display of steel brushes	W. W. Freeman	Los Angeles	Diploma.
Burr folding bed	W. G. Jobson	San Francisco	Diploma.
Interior wall decorations	J. Harry Conlan	Los Angeles	Diploma.
Zinfandel and Riesling wines	Goldburg & Co.	San Francisco	Diploma.
Pure California olive oil	C. W. Coburn & Co.	San Francisco	Diploma.
Combination ladder	E. S. Webster	Los Angeles	Diploma.
Artistic job printing	Herald Job Print- ing Office	Los Angeles	Diploma.
Stationary engine and shaper	D. C. Wilgus	Los Angeles	Diploma.
Fifteen horse-power engine, nickel plat- ing plant, and Hagard's shell filler	L. A. Tool Co.	Los Angeles	Diploma.
Display of stoves	Northerafts & Clark	Los Angeles	Diploma.

SPEED PROGRAMME.

MONDAY, OCTOBER 10, 1887.

RACE No. 1—TROTTING.

3:00 Class. Inez, Geronimo, and L. J. Rose's stable barred. Purse, three hundred dollars. One hundred and eighty dollars to first; ninety dollars to second; thirty dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Pendennis, b. g., by Sultan	Dr. C. Edgar Smith	Los Angeles.
Victor, b. g., by Don Victor	J. G. Denman	Norwalk.
Oliver J., b. g., by Oddfellow	L. J. Felton	Santa Ana.
Belle Forrest, b. m., by Chief of Echoes	Wm. Smith	Los Angeles.
Inca, Jr., ch. s., by Inca	D. G. Whiting	San Bernardino.
Danger, b. g., by Oddfellow	L. T. Garnsey	Santa Ana.
Little Gyp, b. g., unknown	Myron F. Tarble	Los Angeles.

Position at Starting.

1. Victor	.....
2. Pendennis	.....
3. Oliver J	.....
4. Belle Forrest	.....
5. Inca, Jr.	.....
6. Danger	.....

Position at Close.

Belle Forrest	.....	5	1	1	1
Pendennis	.....	1	6	6	5
Danger	.....	2	2	3	2
Inca, Jr.	.....	6	5	2	3
Oliver J	.....	3	3	5	4
Victor	.....	4	4	4	6

Time—2:39; 2:38; 2:39; 3:03.

RACE No. 2—TROTTING.

2:23 Class. Purse, six hundred dollars. Three hundred and sixty dollars to first; one hundred and eighty dollars to second; sixty dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hunter, br. g., by Jerry Ladd	R. J. Blue	Santa Ana.
Valentine, b. g., by Ferral's Clay	J. H. Kelly	San Bernardino.
Stamboul, b. s., by Sultan	L. J. Rose	San Gabriel.
Longfellow, ch. g., by Hambletonian	W. H. Seale	Mayfield.
Rexford, b. c., by Electioneer	Palo Alto Stock Farm.	Menlo Park.
Thapsin, blk. g., by Berlin	Wilbur F. Smith and E. H. Miller, Jr.	Sacramento.
Palatina, pinto m., by Milton Medium	L. B. Lindsay	Portland, Or.
Lillie Standley, b. m., by Whippleton	J. A. Goldsmith	Oakland.
Maid of Oaks, ch. m., by Duke McLellan	A. McDowell and M. Salesbury	Oakland.
Black Diamond, blk. g., by Milton Gold Dust	H. Hitchcock	Denver, Col.
Harry Velox, b. g., by Velox	R. Barnes	Butte, Mon.
Magdallah, ch. m., by Primus	J. W. Donathan	San José.
John R. Wise, ch. g., by Hambletonian Tranby	Orrin A. Hickok	San Francisco.

Position at Starting.

1. Stamboul	.....
2. Black Diamond	.....
3. Thapsin	.....
4. Valentine	.....
5. Harry Velox	.....

Position at Close.

Stamboul	.....	1	1	1
Thapsin	.....	2	2	0
Black Diamond	.....	3	3	3
Harry Velox	.....	4	4	0
Valentine	.....	dis.		

Time—2:18½; 2:21; 2:23½.

RACE NO. 3--RUNNING.

Purse, one hundred and fifty dollars. Free for all; weight for age. Ninety dollars to first horse; forty-five dollars to second; fifteen dollars to third. Half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie, g. m. (5), by Stormy John.....	M. A. Foster.....	Capistrano.
Minnie Stratton, blk. m. (4), by Reveille.....	Thomas Stratton.....	San Diego.
Mikado, ch. g. (3), by Shiloh.....	B. P. Hill.....	El Cajon.
Johnny Gray, g. g. (aged), by Shiloh.....	B. P. Hill.....	El Cajon.
Confidence, cr. col. s., by Walnut Bark.....	L. A. Blasingame.....	Fresno.
Glenell (Billy Johnson), ch. g. (aged), by Glenelg.....	Arcadia Stables.....	Santa Monica.
Carman, ch. f. (2), by Wildidle.....	Laurel Wood Stables.....	Santa Clara.
Kildare, ch. c. (2), by Kyrle Daly.....	James B. Chase.....	San Francisco.
Rosedale, ch. f. (2), by Joe Hooker.....	James B. Chase.....	San Francisco.

Position at Starting.	Weight.	Position at Close.
1. Mikado.....	113 lbs.	Glenell..... 1
2. Kildare (carried 102).....	95 lbs.	Minnie Stratton..... 2
3. Minnie Stratton.....	115 lbs.	Mikado..... 3
4. Glenell.....	115 lbs.	Kildare..... (Bolted and threw rider).

Time—0:49 $\frac{3}{4}$.

RACE NO. 4--RUNNING.

Purse, two hundred and fifty dollars. Free for all; weight for age. One and one fourth miles dash. One hundred and fifty dollars to first horse; seventy-five dollars to second; twenty-five dollars to third.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jim Duffy, ch. c. (3), by Joe Hooker.....	F. P. Lowell.....	Sacramento.
Robson, ch. c. (3), by Joe Hooker.....	J. Cabrera.....	Fresno.
John Treat, g. g. (4), by Shiloh.....	Al. Morine.....	San Diego.
Adam, ch. g. (5), by Reveille.....	B. P. Hill.....	El Cajon.
Tahoe, ch. c. (3), by imp. Fechter.....	H. L. Samuels.....	Los Angeles.
Galgo, ch. g. (5), by Rutherford.....	Jo. Thomas.....	San Jacinto.
Fred Collier, ch. g. (aged), by Joe Hooker.....	S. B. Dennis.....	Los Angeles.
Edelweiss, br. m. (4), by Joe Hooker.....	Thos. S. B. Wolfskill.....	Santa Monica.
Clifton Bell, b. s. (aged), by Leinster.....	William Green.....	Green Meadows.
Notidle, ch. f. (3), by Wildidle.....	M. F. Tarpey.....	San Francisco.
Grover Cleveland, ch. c. (4), by Monday.....	Matt. Storns.....	Oakland.
Accident, br. s. (aged), by Monday.....	G. W. Leland.....	Santa Barbara.
Dublin Bay, b. s. (6), by Grinstead.....	F. M. Slaughter.....	El Chino.

Position at Starting.	Weight.	Position at Close.
1. John Treat.....	115 lbs.	Grover Cleveland..... 1
2. Adam.....	115 lbs.	John Treat..... 2
3. Clifton Bell.....	118 lbs.	Dublin Bay..... 3
4. Galgo.....	115 lbs.	Accident..... 4
5. Dublin Bay.....	118 lbs.	Adam..... 5
6. Grover Cleveland.....	118 lbs.	Clifton Bell..... 6
7. Accident.....		Galgo..... 7

Time—2:09.

RACE No. 5—RUNNING.

Santa Anita Stake. For two-year olds, foals of 1885; two hundred dollars added; fifty dollars entrance; twenty-five dollars forfeit; ten dollars declaration, January 1, 1887. One mile. Stake computed and divided: two hundred and eighty-two dollars to first; one hundred and forty-one dollars to second; forty-seven dollars to third. Closed with nine nominations.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
—, ch. f., by Monitor (deceased)	Michado Bros.	Michado.
General Gordon, b. c., by Hockhocking	A. J. Hutchinson	London, Eng.
Bonnie Blue, ch. f., by Jim Polk	R. E. Stewart	Garden Grove.
—, ch. c., by Klipspringer	F. Pico	Los Angeles.
Hazel, b. f., by Balboa	Charles Thomas	San Jacinto.
Ed. McGinnis, b. c., by Grinstead	H. L. Samuels	Los Angeles.
Typesetter, b. c., by Hockhocking	F. McLean	Wilmington.
Origin, b. c., by Hardwood	W. A. Pallet	Trego.
Andy Ryan, ch. c., by Billy Lee	W. R. Rowland	Puente.

Position at Starting.	Position at Close.
1. Ed. McGinnis	Ed. McGinnis
2. Hazel	Hazel
3. Typesetter	Typesetter

Time—1:45.

TUESDAY, OCTOBER 11, 1887.

RACE No. 6—TROTTING.

Sunny Slope Stake. For foals of 1885. Fifty dollars entrance; twenty-five dollars forfeit; ten dollars declaration, January 1, 1887; two hundred dollars added. Mile and repeat. Value to winner, three hundred and fifty-seven dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
—, ch. c., by Del Sur	Geo. Garson	Compton.
—, ch. f., by Del Sur	Geo. Garson	Compton.
—, b. c., by A. W. Richmond	J. K. Gries	S. Buenaventura.
—, b. f., by A. W. Richmond	J. G. Hill	S. Buenaventura.
Nehusta, b. f., by Stamboul	L. J. Rose	San Gabriel.
Sultandin, ch. c., by Sultan	Dr. C. Edgar Smith	Los Angeles.
Raymon, b. c., by Simmons	Charles A. Darfee	Los Angeles.
Miss Stoutz, blk. f., by Del Sur	Geo. A. Vegnito	Los Angeles.
J. G. Burney, b. c., by Del Sur	J. M. Dawson	Los Angeles.
—, ch. c., by Del Sur	P. Goodwin	Los Angeles.
Al. Borak, b. c., by Sultan	R. T. Vandevoort	Pasadena.

Position at Starting.	Position at Close.
1. Raymon	Raymon
2. Sultandin	Sultandin

Time—3:03½.

RACE No. 7—RUNNING.

Purse, two hundred dollars; one hundred and twenty dollars to first; sixty dollars to second; twenty dollars to third. One-half mile heats. All ages. Weight for age.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie Stratton, blk. f., by Reveille	Thomas Stratton	San Diego.
Confidence, cr. col. s., (aged), by Walnut Bark	L. A. Blasingame	Fresno.
Glenell (Billy Johnson), ch. g. (aged), by Glenelg	Arcadia Stables	Santa Monica.
Telephone, br. g., by Wildidle	George L. Waring	Riverside.
Notidle, ch. f., by Wildidle	M. F. Tarpey	San Francisco.
Johnny Gray, g. g. (aged), by Shiloh	B. P. Hill	El Cajon.

Position at Starting.	Weight.	Position at Close.
1. Telephone	110 lbs.	Minnie Stratton..... 1 1
2. Glenell	110 lbs.	Glenell..... 2 2
3. Minnie Stratton	110 lbs.	Telephone
		3 3
Time—0:55; 0:52½.		

WEDNESDAY, OCTOBER 12, 1887.

RACE No. 8—TROTTING.

2:35 Class. Purse, four hundred dollars; two hundred and forty dollars to first; one hundred and twenty dollars to second; forty dollars to third. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Geronimo, b. g., by Inca	C. A. Darfee	Los Angeles.
Rajah, b. s., by Sultan	Dr. K. D. Wise	Los Angeles.
Belle Forrest, b. m., by Chief of Echoes	Wm. Smith	Los Angeles.
Alfred S, b. g., by Elmo	W. H. Seale	Mayfield.
Howard, b. g., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Maggie E, b. m., by Nutwood	S. E. Emerson	San José.
Palifina, spt. m., by Milton's Medium	L. B. Lindsay	Portland, Or.
Carl, ch. g., by Hidalgo	H. Hitchcock	Denver, Col.
Contractor, br. g., by Sultan	C. R. Fickett	Los Angeles.
Inez, b. m., by The Moor	L. J. Rose, Jr.	S. Buenaventura.
Captain Jack, b. g.	R. Barnes	Butte, Montana.

Position at Starting.	Position at Close.
1. Contractor	Carl
2. Carl	Contractor
	1 2 1 1
	2 1 2 2
Time—2:37½; 2:38; 2:34½; 2:35.	

RACE No. 9—TROTTING.

Special mixed race. Purse, seven hundred and fifty dollars. Two thirds to first horse; one third to second. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Arrow, b. g., by A. W. Richmond (pacer)	Durfee & Covarrubias	Los Angeles.
Arab, b. g., by Arthurton (trotter)	Orrin A. Hickok	San Francisco.

Position at Starting.	Position at Close.
1. Arab	Arrow
2. Arrow	Arab
	1 1 1
	2 2 2
Time—2:25; 2:22½; 2:28½.	

RACE No. 10—TROTTING.

Southern California trotting stake. Foals of 1884. Fifty dollars entrance; twenty-five dollars forfeit; fifteen dollars declaration, January 1, 1887; three hundred dollars added. Stake computed: three hundred and fifteen dollars to first horse; one hundred and fifty-seven dollars and fifty cents to second; and fifty-two dollars and fifty cents to third.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
General Washington, b. c., by Jerry Ladd	J. M. Dawson	Los Angeles.
Soudan, blk. c., by Sultan	L. J. Rose	San Gabriel.
Cadamus, ch. g., by Shamrock	L. J. Felton	Santa Ana.
Tom Rice, b. c., by Bob Mason	J. B. Palin	Springville.
Don Patricio, g. c., by A. W. Richmond	Chrisman & Willoughby	S. Buenaventura.
Leonor, b. f., by Dashwood	C. A. Durfee	Los Angeles.

Position at Starting.	Position at Close.
1. Tom Rice	Leonor
2. Leonor	Tom Rice
3. Cadamus	Cadamus

Time—2:49; 2:46½; 2:42.

RACE No. 11—RUNNING.

Purse, two hundred dollars. All ages. Weight for age. One hundred and twenty dollars to first horse; sixty dollars to second; and twenty dollars to third. One and one sixteenth mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jim Duffy (3), ch. c., by Jo Hooker	F. P. Lowell	Sacramento.
Robson (3), ch. c., by Joe Hooker	J. Cabrera	Fresno.
Carmalita (3), b. f., by Hardwood	Al. Morine	San Diego.
Robert Kid (4), b. c., by Hardwood	B. P. Hill	El Cajon.
Ed. McGinnis (2), b. c., by Grinstead	H. L. Samuels	Los Angeles.
Fred Collier (aged), ch. g., by Joe Hooker	S. B. Dennis	Los Angeles.
Dublin Bay (6), b. s., by Grinstead	F. M. Slaughter	Chino.
Notidle (3), ch. f., by Wildidle	M. F. Tarpey	San Francisco.
Carmen (2), ch. f., by Wildidle	Laurel Wood Stable	Santa Clara.
Grover Cleveland (4), ch. c., by Monday	Matt. Storns	Oakland.
Gen. Gordon (2), b. c., by Hockhocking	Capt. A. J. Hutchinson	London, Eng.
Accident (aged), br. s., by Monday	G. W. Leland	Santa Barbara.

Position at Starting.	Weight.	Position at Close.
1. Dublin Bay	118 lbs.	Grover Cleveland
2. Ed. McGinnis (carried 86)	82 lbs.	Carmalita
3. Carmalita	110 lbs.	Ed. McGinnis
4. Fred Collier	115 lbs.	Dublin Bay
5. Grover Cleveland	118 lbs.	Fred Collier

Time—1:53½.

THURSDAY, OCTOBER 13, 1887.

RACE NO. 12—TROTTING.

2:20 Class. Purse, six hundred dollars. Three hundred and sixty dollars to first horse; one hundred and eighty dollars to second; and sixty dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maid of Oaks, ch. m., by Duke McLellan	M. Salisbury	Pleasanton.
Thapsin, blk. g., by Berlin	Wilbur F. Smith	Sacramento.
Valentine, b. g., by Ferral's Clay	J. H. Kelly	San Bernardino.
Stamboul, b. s., by Sultan	L. J. Rose	San Gabriel.
Sister, b. m., by Admiral	J. A. Goldsmith	Oakland.
Menlo, b. s., by Nutwood	Wm. Dwyer	San José.
Harry Velox, b. g., by Velox	R. Barnes	Butte, Montana.

Position at Starting.	Position at Close.
1. Valentine	Stamboul
2. Stamboul	Thapsin
3. Thapsin	Valentine

Time—2:23½; 2:26; 2:26½.

RACE NO. 13—RUNNING.

Purse, three hundred dollars; for all ages; weight for age. Two mile dash. One hundred and eighty dollars to first; ninety dollars to second; thirty dollars to third.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Notidle (3), ch. f., by Wildidle	M. F. Tarpey	San Francisco.
Robson (3), ch. c., by Joe Hooker	J. Cabrera	Fresno.
Tahoe (3), ch. c., by imp. Fechter	H. L. Samuels	Los Angeles.
Galgo (5), ch. g., by Rutherford	Jo. Thomas	San Jacinto.
Fred Collier (aged), ch. g., by Joe Hooker	S. B. Dennis	Los Angeles.
Clifton Bell (aged), b. s., by Leinster	Wm. Green	Green Meadows.
Edelweiss (4), b. m., by Joe Hooker	Mrs. S. B. Wolfskill	Santa Monica.
Narcolla (3), b. f. by Norfolk	Matt. Storns	Oakland.
Accident (aged), br. h., by Monday	G. W. Leland	Santa Barbara.

Position at Starting.	Position at Close.
1. Fred Collier	Narcolla
2. Galgo	Galgo
3. Narcolla	Fred Collier

Time—3:37½.

RACE NO. 14.

Thirty mile California long distance race. Riders allowed six horses each. Change horses each mile. Purse, five hundred dollars; three hundred dollars to first; one hundred and fifty dollars to second; fifty dollars to third.

Name of Rider.	By Whom Entered.	P. O. Address.
Card Pugh	Card Pugh	San Bernardino.
Miguel Fryor	M. A. Forster	Capistrano.
M. Lugo	A. F. Bland	Los Angeles.
Lucas Flowers	C. A. Durfee	Los Angeles.

Position at Starting.

Position at Close.

1. Card Pugh	Card Pugh	1
2. Miguel Pryor	Miguel Pryor	2

Thirty miles. Time—One hour six minutes thirty seconds.

FRIDAY, OCTOBER 14, 1887.

RACE NO. 15—TROTTING.

2:27 Class. Purse, five hundred dollars; three hundred dollars to first horse; one hundred and fifty dollars to second; fifty dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rajah, b. s., by Sultan	Dr. K. D. Wise	Los Angeles.
Inez, b. m., by The Moor	L. J. Rose, Jr.	S. Buenaventura.
Kate Ewing, blk. m., by Berlin	Lee Shaner	San Francisco.
Spry, b. g., by Gen. Benton	Palo Alto Stock Farm	Menlo Park.
Jane L, br. m., by Hambletonian Mambrino	L. B. Lindsay	Portland, Or.
Lillie Standly, b. m., by Whippleton	J. A. Goldsmith	Oakland.
Maid of Oaks, ch. m., by Duke McLellan	Andy McDowell	Pleasanton.
Luella, b. m., by Chickamauga	H. Hitchcock	Denver, Col.

Rajah—W. O. for entrance money.

RACE NO. 16—RUNNING.

Purse, two hundred and fifty dollars. Free for all; weight for age; one hundred and fifty dollars to first; seventy-five dollars to second; twenty-five dollars to third. Three-quarter mile heats.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Manzanito, c. h., no pedigree	J. Cabrera	Fresno.
Adam (5), ch. g., by Reveille	B. P. Hill	El Cajon.
Johnny Gray (aged), g. g., by Shiloh	B. P. Hill	El Cajon.
Glenell (Billy Johnson, aged), ch. g., by Glenelg	Arcadia Stables	Santa Monica.
Dublin Bay (6), b. s., by Grinstead	F. M. Slaughter	Chico.
Telephone (aged), br. g., by Wildidle	Geo. L. Waring	Riverside.
Notidle (3), ch. f., by Wildidle	M. F. Tarpey	San Francisco.
Grover Cleveland (4), ch. s., by Monday	Matt. Storns	Oakland.

Position at Starting.

Weight.

Position at Close.

1. Glenell	110 lbs.	Grover Cleveland	1	1
2. Telephone	110 lbs.	Dublin Bay	5	2
3. Adam	110 lbs.	Adam	2	3
4. Grover Cleveland	113 lbs.	Glenell	3	4
5. Dublin Bay	113 lbs.	Telephone	4	5

Time—1:16½; 1:16.

RACE NO. 17—RUNNING.

For two-year olds; foals of 1885. Purse, one hundred and fifty dollars. Ninety dollars to first; forty-five dollars to second; fifteen dollars to third. Five eighths of a mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Nettie Washington, ch. f., by Jupiter	Dr. B. F. Bragg	Los Angeles.
Mart Gibson, ch. c., by Joe Hooker	J. Cabrera	Fresno.
Typesetter, b. c., by Hockhocking	F. McLean	Wilmington.
General Gordon, b. c., by Hockhocking	Capt. A. J. Hutchinson	London, Eng.
Andy Ryan, ch. c., by Billy Lee	B. F. Wood	Los Angeles.
Carmen, ch. f., by Wildidle	Laurel Wood Stable	Santa Clara.
Kildare, ch. c., by Kyrle Daly	James B. Chase	San Francisco.
Rosedale, ch. f., by Joe Hooker	James B. Chase	San Francisco.
Hazel, b. f., by Balboa	Charles Thomas	Oak Grove.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Rosedale	Rosedale
2. Nettie Washington	Typesetter
3. Hazel	Kildare
4. Typesetter	Nettie Washington
5. Kildare	Hazel

Time—1:04.

SATURDAY, OCTOBER 15, 1887.

RACE NO. 18—TROTTING.

2:45 Class. Purse, three hundred and fifty dollars. Two hundred and ten dollars to first; one hundred and five dollars to second; thirty-five dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Geronimo, b. g., by Inca	C. A. Durfee	Los Angeles.
Belle Forrest, b. m., by Chief of Echoes	Wm. Smith	Los Angeles.
Rajah, b. s., by Sultan	Dr. K. D. Wise	Los Angeles.
Dubec, b. g., by Sultan	L. J. Rose	San Gabriel.
Alfred S, b. g., by Elmo	W. H. Seale	Mayfield.
Gertrude Russell, b. f., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Contractor, br. g., by Sultan	C. R. Fickett	Los Angeles.
Maggie E, b. m., by Nutwood	S. E. Emerson	San José.
Captain Jack, b. g., sire unknown	R. Barnes	Butte, Montana.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Contractor	Contractor
2. Belle Forrest	Belle Forrest

Time—2:37; 2:29½; 2:38.

RACE No. 19—TROTTING.

Free to all horses in the world that have never beaten 2:16. Purse, one thousand dollars. Six hundred dollars to first; three hundred dollars to second; one hundred dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Valentine, b. g., by Ferral's Clay	J. H. Kelly	San Bernardino.
Menlo, b. s., by Nutwood	Wm. Dwyer	San José.
Manzanita, b. m., by Electioneer	Palo Alto Stock Farm	Menlo Park.
Adair, b. g., by Electioneer	E. H. Miller, Jr.	San Francisco.
Lot Slocum, br. g., by Electioneer	Lee Shaner	San Francisco.
Harry Velox, b. g., by Velox	R. Barnes	Butte, Montana.
Arab, b. g., by Arthurton	Orrin A. Hickok	San Francisco.

Position at Starting.

1. Adair	Arab
2. Lot Slocum	Adair
3. Arab	Lot Slocum

Position at Close.

1	1	1
3	2	2
2	3	3

Time—2:22; 2:21 $\frac{1}{4}$; 2:20.

RACE No. 20—PACING.

Free to all pacers. Purse, six hundred dollars. Three hundred and sixty dollars to first; one hundred and eighty dollars to second; sixty dollars to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
L. C. Lee, br. s., by Elmo, Jr.	H. Hitchcock	Denver, Col.
Arrow, b. g., by A. W. Richmond	Durfee & Covarrubias	Los Angeles.
Chapman, b. g., sire unknown	Lee Shaner	San Francisco.
Pocahontas, ch. m., by Washington	John A. Goldsmith	Oakland.
Almont Patchen, br. s., by Juanito	Wm. M. Billups	Colusa.

Position at Starting.

1. L. C. Lee	Arrow
2. Arrow	L. C. Lee

Position at Close.

2	1	1	1
1	2	2	2

Time—2:17 $\frac{3}{4}$; 2:19; 2:21 $\frac{1}{2}$; 2:20.

RACE No. 21—RUNNING.

Los Angeles Derby Stake. Three-year olds, foals of 1884. Closed December 1, 1886, with five nominations. Fifty dollars entrance; twenty-five dollars forfeit; fifteen dollars declaration, January 1, 1887; three hundred dollars added; stake computed and divided: sixty per cent, thirty per cent, and ten per cent. One and one half miles.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Narcola, b. f., by Norfolk	Matt. Storns	Oakland.
Carmalita, b. f., by Hardwood	Al. Morine	San Diego.
Tahoe, ch. c., by imported Fechter	H. L. Samuels	Los Angeles.
Manzanita, b. f., by Hardwood	Capt. A. J. Hutchinson	London, Eng.
Mikado, ch. g., by Shiloh	B. P. Hill	El Cajon.

Position at Starting.

	Weight.
Mikado	115 lbs.
Manzanita	115 lbs.
Narcola	115 lbs.
Carmalita	115 lbs.

Position at Close.

Narcola	1
Carmalita	2
Manzanita	3
Mikado	4

Time—2:40 $\frac{3}{4}$.

FRIDAY, OCTOBER 14, 1887.

RACE No. 22—SPECIAL TROTTING.

Purse, four hundred dollars. For named horses; two hundred and forty dollars to first; one hundred and twenty dollars to second; forty dollars to third. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Inca, Jr., ch. s., by Inca	D. G. Whiting	San Bernardino.
Victor, b. g., by Don Victor	J. G. Denman	Norwalk.
Pendennis, b. g., by Sultan	Dr. C. Edgar Smith	Los Angeles.
Oliver J, b. g., by Oddfellow	L. J. Felton	Santa Ana.

<i>Position at Starting.</i>		<i>Position at Close.</i>			
1. Inca, Jr.	Oliver J	3	1	1	1
2. Victor	Inca, Jr.	1	3	3	3
3. Pendennis	Victor	2	2	2	2
4. Oliver J	Pendennis	4	4	dr.	

Time—2:37½; 2:39; 2:38½; 2:38½.

TRANSACTIONS

OF THE

SEVENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Monterey and San Benito.

OFFICERS OF THE ASSOCIATION.

J. D. CARR	President.
JOHN J. KELLY	Secretary.
WILLIAM VANDERHURST	Treasurer.

DIRECTORS.

J. D. CARR	Salinas City.
J. D. IVERSON	Salinas City.
M. LYNN	Salinas City.
W. L. CARPENTER	Salinas City.
P. KILBURN	Salinas City.
H. COREY	Salinas City.
DR. THOMAS FLINT	San Juan South.
B. V. SARGENT	Monterey.

REPORT.

SALINAS CITY, December 1, 1887.

To the honorable the State Board of Agriculture :

GENTLEMEN: The Directors of the Seventh District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

JOHN J. KELLY, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Rent of Pavilion	\$10 00	
Sale of privileges	796 40	
Single admission tickets	987 00	
Annual membership	330 00	
Season tickets	62 00	
Hack badges	44 00	
Entrance money	665 00	
State warrant	1,500 00	
Amount overdrawn	201 55	
	— — — —	\$4,625 95

Expenditures.

Premiums and purses	\$3,032 50	
Discount	20 00	
Printing and advertising	153 25	
Music	200 00	
Gas and water	26 40	
Material	521 50	
Labor	425 75	
Insurance	82 50	
National Trotting Association	56 00	
Freight, expressage, and postage	14 90	
Interest	93 15	
	— — — —	\$4,625 95

ANNUAL ADDRESS.

BY B. V. SARGENT, JR.

MR. PRESIDENT, LADIES AND GENTLEMEN: In rising to address you this evening I feel very much like a certain Italian, who having worked at various times on sheep ranches, cattle ranches, and hog ranches, finally found more profitable employment in a San José foundry. One day, when busy at work, the foreman of his room told him to bring a monkey-wrench. Our friend from the sunny clime thought a moment, scratched his head and thus ejaculated, "I worka the sheepa ranch, I worka the hoga ranch, and I worka the cattle ranch, but I never before worka the monka-wrench."

I have debated in college and argued in mock courts, but this is my first appearance before the public, and whilst I acquiesce to the wishes and obediently comply with the request of your honored President, I cannot but question the judgment which has led him to select a mere novice in the art of oratory to deliver the annual address on this occasion.

This year has marked an important era in the history both of our State and of our county. Heretofore Californians have lived, comparatively speaking, in themselves and for themselves. Thousands of miles away from the heart throbs of civilization they have felt only its slighter pulsations. "Far from the madding crowd's ignoble strife, they kept the even tenor of their way," basking contentedly in their glorious climate, and caring not for the coming of others.

But the breath of energy has wafted abroad the fame of our State. Visitors have come and gone, and they have spread o'er the lands of the north, the south, and the east, the wonders of the Golden West. People of the overcrowded cities beyond the Rockies, hearing the tales of our wonderland, have left the homes of their childhood; have left the hoar-king's chilling blasts, and the summer's sweltering heat, to come and enjoy with us our sunshine and our happiness. Capital, too, ever keeping open the weather-eye for increase, this year has wended its way westward, and thousands upon thousands of dollars which left us in the days of '49 as gold dust, have floated back again into our coffers. Feeling the forward impulse caused by more people and more wealth, the latent energies of our business men have been roused; old railroads have been extended, new ones built, real estate changed hands, and substantial improvements been made in all of our towns and cities. The State herself, as though moved by some hidden impulse, has this year put on her best bib and tucker, and added the crown of wonder to the visitor's already great amazement, by yielding up her stores in hitherto unsurpassed richness and profusion.

Look at the success attained by our State and various district fairs for proof of this assertion. The former has been pronounced to be by far the most successful ever held in the capital city; its exhibitions are claimed to be the finest, and its results, as showing the rapid advancement of our State in every branch of art, industry, and science, far exceeds the expectations even of the most sanguine.

So also may be said of individual district fairs. From Mt. Shasta to San Diego, from the ocean waves to the Sierras, all have outrivaled their predecessors, and gone them one better, both in the enthusiasm manifested by the people, and in the display of district products.

And our own district and county, too, have moved along with the rest of the State. One short year ago, communication between our southern extremity and the county seat, involved a wagon or stage ride of two or more days, over a dry, hot, and windy road. Then the farmer must haul his grain miles upon miles, before reaching a shipping point. Now, the iron causeway of the railroad stretches the length of our great valley. The daily neigh of the iron horse awakens the echoes, which hitherto reverberated only to the cattle's low, and the coyote's yelp. Towns and villages, and even a regal city, have sprung up along its course, as though called into being by the magician's wand. The whilom untenanted lands of the South now teem with life and energy. The wandering cattle find their trails through the rich bunch grass, obstructed by the preëmptor's and the homesteader's fence; and grain fields and young orchards everywhere dot the surface of valley and rich, rolling hills.

Mother earth, too, has yielded up her treasures. Gold mines have been discovered in this county, rich, almost, as the fabulous coffers of King Croesus, and though there are skeptics who doubt, the Los Burros mining district may yet cause doubters to wonder at their own skepticism; nor, when I gaze around me, and see these products of toil and industry, can I but believe that our own district has sent back the wave of enthusiasm and praise to our sister counties, with an increased vibration.

I can not be so uncautious as to say that the bread, and pies, and cakes, competing for premiums this year, are better than like domestic productions of former years, for the bread of our mothers is proverbially better than that of our wives, and the pie crust too; but were these garnered stores to be contrasted with exhibitions of former years: were the ghosts of the past to be conjured up, and placed shoulder to shoulder with the spirit of enthusiasm, and friendly rivalry everywhere manifested during this fair, no one would have the temerity to say, that we, too, have not been floating along, side by side, with our sister counties, on the stream of prosperity and progress.

The fruit display, indeed, shows a marked and remarkable improvement. The grapes, though small in quantity, might well compete with the choicest raised in our own choice State. And, indeed, so successfully have they competed, that to this district fell the honor of carrying off the palm for finer wines, in the rivalry of counties, at Sacramento, this year. The other fruits, in excellence of flavor, and largeness of size, far exceeded anything of former years: proving conclusively that the fruit industry is rapidly advancing in our county. Our merchants, also, have again come to the front, and shown that spirited energy, which has ever characterized their efforts to make our fairs a success.

But the brunt of enthusiasm must belong to the ladies, and they have shown it, not only in the way in which our hall is arranged and decorated, but also in the beautiful and delicate articles of their handicraft, everywhere to be seen around us.

But, ladies and gentlemen, notwithstanding all that can be said in praise of our exhibition this year, in my humble judgment, it does not do full justice to our county. Were all our people to take the interest in our fairs which they should, not only would we have a larger and more varied exhibition of the district's productions, but we could attract more people, and, consequently, have a far more successful and satisfactory fair.

Many of our people do not show interest and energy enough. They rely entirely upon others to display the district's productions, excusing their own lack of enthusiasm by claiming that what their efforts would bring would add simply to the quantity, and not to the quality or the variety. Yet these same people will come to our fairs and boast that they have apples, and fruits, and vegetables at home "which can beat all those."

Ladies and gentlemen, this is not right: it is not the proper spirit to manifest. It behooves every person—aye, it is the bounden duty of every one who can—to contribute his mite towards making our fairs a complete success. Strangers are now rapidly filling up our State. They come with means to improve, and with the intention to remain with us permanently. To what places will they first turn their eyes? Certainly to those places which extend the right hand of fellowship the heartiest, and offer to them the most inducements to settle. Many of our counties, recognizing this fact, have used their best efforts in publishing abroad the splendid variety and quality of their soil's products, the excellence of their climate, and the many opportunities for investment. Recognizing that our fairs are one of the best modes of advertising the local advantages, the people have vied with one another to make them successful, and to bring out to the utmost extent the district's best productions.

In the southern part of the State there is being witnessed an era of prosperity and excitement rivaling almost "the days of old, and the days of gold." Strangers are streaming in, comfortable homes are being erected, and substantial improvements are being made on all sides. Those portions of the State which have catered most to the stranger have been amply repaid in the material advancement of every interest and industry, and are to-day pronounced the most energetic and enterprising counties of the State. Yet our county has hardly felt the least quiver of the excitement, only because her people will not rouse their energies and push her forward. She has within her borders natural advantages which can make her the successful rival of the counties much further advanced.

Do we want soil? We have acres upon acres richer than the famed valley of the Nile. Aye, we have soil adapted to every product which can be raised in any part of the State. The soil in the southern part of the county has been pronounced by old grape growers to be especially adapted to the culture of that fruit. In our valleys we can produce all kinds of cereals in abundance, whilst in the vast stretch of country lying between the valley and the seacoast, and again to the eastward of the valley, fruits may be grown which in sweetness, flavor, and quality can rival the best in the State.

Do we want climate? In the hotter region of the south the temperature can develop all that is indigenous to the tropics, whilst here, in the north end, along our seacoast, all the products of the temperate zone thrive in abundance. And a more healthful climate can be found nowhere on God's footstool.

All who have felt the blighting breath of disease may well turn their eyes to our county for their Mecca. The weak and trembling consumptive, the fallow dyspeptic, all can find here renewed life and vigor; and let it not be supposed that this class of people should meet with disfavor. They are to be gladly welcomed, for as a general rule those people who look to California for health are people of means. They come here to find comfort and renewed strength. They come, not to make money, but to spend it, and, consequently, are simply a source of money making to others. They willingly exchange their means for the good health our climate can give.

And yet, notwithstanding these advantages which the generous hand of

nature has bestowed upon us, we do not stand where we should in the ranks of counties. Why? Because our people, like Micawber, are waiting for something to turn up. But Micawber remained poor all his life and so shall we unless we *make* that something turn up. We must bring capital and people to us. We must spread abroad our capacities and means for investment. We must extend the right hand of fellowship to the outsider.

One of the ways of doing this is to make our fair thoroughly and completely successful. This is a better inducement to the stranger's eye than anything else we can devise, for it shows to him what his industry and care can achieve. To the furtherance of this end every person should use his utmost endeavors. If he can bring nothing himself, he can at least spur on his more fortunate neighbor. It is his interest to see that all our county's products are brought out for exhibition, for every advance the county at large makes, benefits each individual in due proportion.

But ere the sunshine of prosperity can well and truly brighten up our county, there is yet one further step to be taken. The numerous large ranches owned by single individuals must be sliced up into smaller tracts.

The time is not far distant when this will become absolutely necessary. The proper development of the county will demand it. People must be brought in and homes provided for them. Wholesale farming is far from being the most profitable. The small farmer cultivates his land more thoroughly, takes better care of his crop, and has every advantage over his larger brother. And all the ranch owners will, before long, see as some have already seen, that the partition of his ranch will yield him more profit than can be obtained from large possessions.

Then, ladies and gentlemen, when our lands are settled up and when all our people strive to make our fairs successful in showing to the outside world what we are and what we can do, then will our resources be fully developed; and then will we stand where our natural advantages of size, soil, and climate would rank us among the first counties of one of the first States in the Union. I thank you very much for your kind attention.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBREDS.			
Stallion, three years old and over, Ironclad	Charles Cockerill	Soledad	\$10 00
Stallion, two years old, Roundout	M. D. Kelly	Gonzales	\$7 50
Stallion, one year old, Sorrel Charley	Charles Luce	Salinas City	\$5 00
Suckling colt, Nomad	J. D. Carr	Salinas City	\$4 00
Mare, three years old and over, Daisy D.	Charles Cockerill	Soledad	\$8 00
Mare, two years old, Kittie C	M. H. Cavanagh	Gonzales	\$5 00
Mare, one year old, Herculean	J. B. Iverson	Salinas City	\$3 00
Stallion with five of his colts, Mambrino, Jr.	J. D. Carr	Salinas City	\$15 00
Mare with four of her colts, Lady Jones	J. B. Iverson	Salinas City	\$10 00
ROADSTERS.			
Stallion or gelding, four years old and over, Black Duke	C. F. Langley	Salinas City	\$10 00
Stallion or gelding, three years old, Capt. Kidd	P. Kilburn	Salinas City	\$8 00
Stallion or gelding, two years old, St. Patrick	J. H. Harris	Salinas City	\$6 00
Stallion or gelding, one year old, Jim Mulvenna, Jr.	J. D. Cochran	Gonzales	\$4 00
Mare, three years old and over, Lavinia	A. A. Watson	Salinas City	\$4 00
Mare, two years old, Junietta	P. Kilburn	Salinas City	\$3 00
Mare, one year old, Maud C	M. H. Clark	Gonzales	\$4 00
HORSES FOR ALL PURPOSES.			
Stallion, four years old and over, Nonpareil	J. C. Storm	Salinas City	\$20 00
Stallion, three years old, Louie	M. H. Clark	Gonzales	\$15 00
Stallion, two years old, Glenwood	J. R. Hebborn	Salinas City	\$10 00
Stallion, one year old, Sausal	J. B. Iverson	Salinas City	\$7 50
Suckling colt, Roger	J. C. Storm	Salinas City	\$5 00
Mare, four years old and over, Maud	P. Kilburn	Salinas City	\$10 00
Mare, three years old, Nellie	M. Lynn	Salinas City	\$5 00
Mare, two years old, Lizzie	J. W. Patton	Natividad	\$5 00
Mare, one year old, Gypsy	W. Parson	Chualar	\$2 00
Gelding, Kingsley	J. B. Iverson	Salinas City	\$10 00
Gelding, Jack	M. Lynn	Salinas City	\$5 00
Mare, four years old and over, with colt, Nelson	C. F. Langley	Salinas City	\$10 00
Mare, four years old and over, with colt, Lizzie	J. B. Iverson	Salinas City	\$5 00
DRAFT HORSES—STANDARD BRED—NORMAN, CLYDE, OR SHIRE.			
Stallion, three years old, Jacko	P. Kilburn	Salinas City	\$10 00
Stallion, four years old, Rivier	J. Storm	Salinas City	\$15 00
Stallion, two years old, Jimmie	M. Lynn	Salinas City	\$7 50
Stallion, one year old, Rivier, Jr.	M. Lynn	Salinas City	\$6 00
Suckling colt	M. Lynn	Salinas City	\$4 00
Mare, four years old and over, Susie	M. Lynn	Salinas City	\$10 00
Mare, three years old, Maud	J. B. Iverson	Salinas City	\$7 50
Mare, two years old, Nellie	P. Kilburn	Salinas City	\$6 00
Mare, one year old, Kittie	P. Kilburn	Salinas City	\$4 00
GRADED DRAFT HORSES.			
Stallion, four years old and over, Ripper	Jas. Storm	Salinas City	\$10 00
Stallion, three years old, Col. Bee	Geo. Thenkauf	Gonzales	\$8 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Stallion, two years old, Ed.....	J. Smith.....	Salinas City.....	\$6 00
Stallion, one year old, Jack.....	J. Smith.....	Salinas City.....	\$4 00
Mare, four years old, Fannie.....	J. R. Hebbroon.....	Salinas City.....	\$15 00
Mare, three years old, Flora.....	J. B. Smith.....	Salinas City.....	\$6 00
Mare, two years old, Nellie.....	J. Lynn.....	Salinas City.....	\$5 00
Suckling colt.....	J. B. Iverson.....	Salinas City.....	\$4 00
CARRIAGE HORSES.			
Span of carriage horses.....	J. D. Carr.....	Salinas City.....	\$10 00
Single buggy horse, Charley V.....	Wm. Vanderhurst.....	Salinas City.....	\$5 00
SWEEPSTAKES.			
Stallion, with four or more colts, Pirea.....	M. Lynn.....	Salinas City.....	\$20 00
Mare, with four or more colts, Lady Nelson.....	J. B. Iverson.....	Salinas City.....	\$20 00
Stallion, of any breed or age, Nonpareil.....	J. C. Storm.....	Salinas City.....	\$15 00
Stallion, of any breed or age, Black Duke.....	C. F. Longley.....	Salinas City.....	\$10 00
Mare, of any breed or age, Maggie.....	M. Lynn.....	Salinas City.....	\$15 00
Mare, of any breed or age, Lady Jones.....	J. B. Iverson.....	Salinas City.....	\$10 00
Gelding, of any breed or age, Kingsley.....	J. B. Iverson.....	Salinas City.....	\$10 00
Colt, of any breed or age, Daisy.....	J. C. Storm.....	Salinas City.....	\$5 00
CLASS II—CATTLE—DURHAM.			
Durham bull, four years old, Sansal Chief.....	P. Kilburn.....	Salinas City.....	\$10 00
Durham bull, three years old, Duke.....	J. B. Iverson.....	Salinas City.....	\$10 00
Durham bull, two years old, Charley.....	B. Graves.....	Salinas City.....	\$7 50
Durham bull, one year old, St. Nicholas.....	J. C. Storm.....	Salinas City.....	\$7 50
Durham bull calf, Storm.....	P. Kilburn.....	Salinas City.....	\$5 00
Durham cow, four years old, Diana.....	P. Kilburn.....	Salinas City.....	\$10 00
Durham cow, three years old, Little Nell.....	P. Kilburn.....	Salinas City.....	\$7 50
Durham cow, two years old, Dorcas 3d.....	P. Kilburn.....	Salinas City.....	\$7 50
Durham cow, one year old, Dewey 4th.....	P. Kilburn.....	Salinas City.....	\$5 00
GRADED CATTLE.			
Graded bull, Tom Tinker.....	B. Hitchcock.....	Salinas City.....	\$10 00
Graded cow, three years and over, Scotty.....	J. C. Storm.....	Salinas City.....	\$10 00
Graded cow, two years and over, Maud.....	J. B. Iverson.....	Salinas City.....	\$5 00
Graded cow, one year and over.....	J. B. Iverson.....	Salinas City.....	\$3 00
Graded bull calf.....	J. B. Iverson.....	Salinas City.....	\$5 00
Best herd of cattle.....	J. C. Storm.....	Salinas City.....	\$15 00
SHEEP.			
Best ram, Frank.....	J. W. Patton.....	Salinas City.....	\$5 00
Best ewe, Fannie.....	J. W. Patton.....	Salinas City.....	\$5 00
SWINE.			
Best boar, Dan.....	W. T. Gilkey.....	Watsonville.....	\$10 00
Best sow, Kate.....	W. T. Gilkey.....	Watsonville.....	\$10 00
Best pair pigs, under six months, Ben and Susan.....	W. T. Gilkey.....	Watsonville.....	\$5 50
CLASS III—POULTRY.			
Best pair Black Spanish chickens.....	J. W. Patton.....	Natividad.....	\$2 00
Best pair Bronze turkeys.....	J. W. Patton.....	Natividad.....	\$2 00
Best pair Brown Leghorns.....	J. W. Patton.....	Natividad.....	\$1 50
CLASS IV—AGRICULTURAL IMPLEMENTS.			
Best harrow.....	J. V. Lacey.....	Salinas City.....	\$10 00
Best sulky harrow.....	J. V. Lacey.....	Salinas City.....	\$10 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I--MISCELLANEOUS.			
Blacksmith work	E. Maguire	Salinas City	\$5 00
Wine or cider press	W. Carpenter	Salinas City	\$2 00
Freight wagon	Iverson Bros.	Salinas City	\$5 00
Two-seated spring wagon	Iverson Bros.	Salinas City	\$5 00
Family carriage	Iverson Bros.	Salinas City	\$7 50
Two-horse top buggy	Iverson Bros.	Salinas City	\$5 00
One-horse buggy, top	J. V. Lacey	Salinas City	\$5 00
One-horse buggy, open	Francee & Burkman	Salinas City	\$5 00
Machine work, iron and steel	J. V. Lacey	Salinas City	\$5 50
Exhibit of brass work	J. V. Lacey	Salinas City	\$2 50
Exhibit of harness and saddlery work	M. Hughes	Salinas City	\$7 50
Best set of team harness	M. Hughes	Salinas City	\$5 00
Best set of buggy harness	M. Hughes	Salinas City	\$5 00
Best set of buggy harness, double	M. Hughes	Salinas City	\$5 00
Best gent's saddle	M. Hughes	Salinas City	\$5 00
Best ladies' saddle	M. Hughes	Salinas City	\$3 00
Best home-made woolen socks	Mrs. Jno. Kaler	Salinas City	\$1 00
Best rug	Fred. Richardson	Salinas City	\$2 00
Best rag rug	Mrs. Jno. Kaler	Salinas City	\$2 00
Best foot mat	Mrs. J. B. Bennett	Salinas City	\$1 00
Best exhibit of silverware	Mrs. J. B. Bennett	Salinas City	\$5 00
Best exhibit of parlor furniture	Francee & Burkman	Salinas City	\$10 00
Best exhibit of chamber furniture	Francee & Burkman	Salinas City	\$5 00
Best exhibit of spring mattresses	Francee & Burkman	Salinas City	\$3 00
Best exhibit of spring beds	Francee & Burkman	Salinas City	\$3 00
Best upholstery	Francee & Burkman	Salinas City	\$5 00
Best display of furniture	Francee & Burkman	Salinas City	\$20 00
Best sack of wheat	J. C. Storm	Salinas City	\$3 00
Best sack of barley	M. Williams	Salinas City	\$2 00
Best sack of oats	J. W. Patton	Salinas City	\$2 00
Best sack of rye	J. B. Hickman	Salinas City	\$2 00
Best sack of corn	W. T. Gilkey	Salinas City	\$2 00
Best exhibit of flax	J. B. Hickman	Salinas City	\$2 00
Best exhibit of hops	Mrs. W. T. Gilkey	Salinas City	\$2 00
Best exhibit of corn	Mrs. W. T. Gilkey	Salinas City	\$2 00
Best exhibit of hams	R. N. Windsor	Gonzales	\$2 50
Best exhibit of sides of bacon	R. N. Windsor	Gonzales	\$2 50
Best exhibit of ten pounds of lard	Mrs. J. B. Hickman	Watsonville	\$2 50
Best exhibit of five pounds of honey in comb	Mrs. W. T. Gilkey	Watsonville	\$2 50
Best exhibit of two pounds of strained honey	Mrs. W. T. Gilkey	Watsonville	\$2 50
Best exhibit of pickled olives	Mrs. W. T. Gilkey	Watsonville	\$2 50
Best sack of potatoes	R. Porter	Salinas City	\$3 00
Best sack of dried beans	W. T. Gilkey	Watsonville	\$2 00
Best melons	S. O. Pugh	Gonzales	\$1 00
Best cucumbers	Mrs. J. B. Hickman	Watsonville	\$1 00
Best twenty pounds of turnips	W. S. Hunt	Watsonville	\$1 00
Best twenty pounds of tomatoes	Mrs. J. B. Hickman	Watsonville	\$1 00
Best sugar beets	Mrs. S. W. Conklin	Salinas City	\$1 00
Best pumpkins	J. R. Hebron	Salinas City	\$1 00
Best radishes	Mrs. J. B. Hickman	Watsonville	\$1 00
Best peanuts	Mrs. J. B. Hickman	Watsonville	\$1 00
Best general display of fruits	W. T. Gilkey	Watsonville	\$10 00
Best twelve varieties of apples	R. N. Windsor	Gonzales	\$5 00
Best single variety of apples	W. S. Hunt	Salinas City	\$2 50
Best collection of pears	W. T. Gilkey	Watsonville	\$5 00
Best single variety of pears	R. N. Windsor	Gonzales	\$2 50
Best peaches	Mrs. J. B. Hickman	Watsonville	\$4 00
Best plums	R. N. Windsor	Gonzales	\$3 50

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best nectarines.....	W. T. Gilkey.....	Watsonville.....	\$2 50
Best collection of grapes.....	S. A. Pugh.....	Gonzales.....	\$4 00
Best collection of wine grapes.....	S. A. Pugh.....	Gonzales.....	\$4 00
Best collection of nuts.....	W. T. Gilkey.....	Watsonville.....	\$5 00
Best collection of oranges.....	W. T. Gilkey.....	Watsonville.....	\$5 00
Best exhibit of domestic canned fruit.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$5 00
Second best exhibit of domestic canned fruit.....	Mrs. P. Zaballa.....	Salinas City.....	\$3 00
Best exhibit of fruit sealed in glass.....	Mrs. W. S. Hunt.....	Salinas City.....	\$5 00
Second best exhibit of fruit sealed in glass.....	Mrs. J. B. Hickman.....	Watsonville.....	\$3 00
Best exhibit of pickles.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$2 00
Best exhibit of sweet pickles.....	Mrs. W. S. Hunt.....	Salinas City.....	\$2 00
Best exhibit of preserves.....	Mrs. P. Zaballa.....	Salinas City.....	\$2 50
Second best exhibit of preserves.....	Mrs. W. T. Gilkey.....	Salinas City.....	\$1 00
Best exhibit of jellies.....	Mrs. John Kaler.....	Salinas City.....	\$2 50
Second best exhibit of jellies.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$1 00
Best exhibit of domestic dried fruit.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$5 00
Best exhibit of prunes and plums.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$2 50
Best exhibit of dried apples.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$2 50
Best exhibit of dried pears.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$2 00
Best exhibit of dried apricots.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$2 00
Best exhibit of dried peaches.....	Mrs. W. T. Gilkey.....	Watsonville.....	\$2 00
Best collection of flowers in bloom.....	P. Zaballa.....	Salinas City.....	\$5 00
Best collection of foliage plants.....	Mrs. P. Zaballa.....	Salinas City.....	\$5 00
Best collection of cut flowers.....	Mrs. S. Dixon.....	Salinas City.....	\$2 50
Best collection of new and rare plants.....	Mrs. P. Zaballa.....	Salinas City.....	\$2 50
Best collection of dahlias.....	Mrs. J. B. Hickman.....	Salinas City.....	\$2 00
Best collection of roses in bloom.....	Mrs. P. Zaballa.....	Salinas City.....	\$2 00
Best collection of fuchsias.....	Mrs. P. Zaballa.....	Salinas City.....	\$1 00
Best collection of ferns.....	Mrs. P. Zaballa.....	Salinas City.....	\$1 00
Best exhibit of wines.....	M. Cartier.....	Salinas City.....	\$15 00
Best exhibit of mineral specimens.....	J. B. Bennett.....	Salinas City.....	\$10 00
Best exhibit of silkworms.....	Mrs. P. Kilburn.....	Salinas City.....	\$5 00
Best exhibit of shells.....	Mrs. J. F. Birlem.....	Salinas City.....	\$3 00
Best exhibit of flour.....	Salinas Mills.....	Salinas City.....	\$5 00
Best lot of cheese.....	Z. Hebert.....	Salinas City.....	\$5 00
Best lot of butter.....	C. Reynolds.....	Salinas City.....	\$5 00
Best pastry.....	Mrs. L. H. Garrigus.....	Salinas City.....	\$1 00
Best home-made bread.....	Myrtle Lean.....	Salinas City.....	\$5 00
Second best home-made bread.....	Minnie Hickman.....	Salinas City.....	\$3 00
Best article in filoselle.....	Mrs. M. L. Dexter.....	Salinas City.....	\$2 50
Second best article in filoselle.....	Mrs. H. S. Ball.....	Salinas City.....	\$1 50
Best article in crewel.....	Mrs. J. B. Bennett.....	Salinas City.....	\$1 50
Second best article in crewel.....	Mrs. Jas. Kaler.....	Salinas City.....	\$1 00
Best article in ribbosene.....	Mrs. M. L. Dexter.....	Salinas City.....	\$2 00
Second best article in ribbosene.....	Mrs. J. B. Bennett.....	Salinas City.....	\$1 00
Best ribbon embroidery.....	Mrs. L. H. Garrigus.....	Salinas City.....	\$2 00
Best plain silk embroidery.....	Mrs. J. B. Bennett.....	Salinas City.....	\$2 00
Second best plain silk embroidery.....	Mrs. H. J. Lind.....	Salinas City.....	\$1 00
Best cambric embroidery.....	Mrs. J. B. Bennett.....	Salinas City.....	\$1 50
Best arrasene.....	Mrs. Dr. J. T. Enos.....	Salinas City.....	\$2 00
Second best arrasene.....	Mrs. H. J. Lind.....	Salinas City.....	\$1 00
Best embroidery on plush.....	Mrs. J. B. Bennett.....	Salinas City.....	\$2 00
Second best embroidery on plush.....	Mrs. H. J. Lind.....	Salinas City.....	\$1 50
Best tapestry embroidery.....	Mrs. J. B. Bennett.....	Salinas City.....	\$2 00
Second best tapestry embroidery.....	Mrs. J. F. Birlem.....	Salinas City.....	\$1 00
Best outline embroidery.....	Pearl Birlem.....	Salinas City.....	\$1 50
Second best outline embroidery.....	Teresa Hartnell.....	Salinas City.....	\$1 00
Best applique embroidery.....	Mrs. P. Kilburn.....	Salinas City.....	\$2 00
Second best applique embroidery.....	Mrs. J. B. Bennett.....	Salinas City.....	\$1 00
Best Turkish embroidery.....	Mrs. J. A. Webster.....	Salinas City.....	\$1 50
Best chenille embroidery.....	Mrs. M. L. Dexter.....	Salinas City.....	\$2 50
Second best chenille embroidery.....	Mrs. R. L. Porter.....	Salinas City.....	\$1 50
Best embroidered table scarf.....	Mrs. Dr. J. T. Enos.....	Salinas City.....	\$3 00
Second best embroidered table scarf.....	Mrs. J. B. Bennett.....	Salinas City.....	\$1 50
Best piano cover.....	Mrs. F. Cox.....	Salinas City.....	\$5 00
Best raised silk work.....	Mrs. J. B. Bennett.....	Salinas City.....	\$2 50
Best organ cover.....	Mrs. S. W. Conklin.....	Salinas City.....	\$4 00
Second best organ cover.....	Mrs. J. B. Bennett.....	Salinas City.....	\$2 00
Best table cover.....	Mrs. F. Cox.....	Salinas City.....	\$4 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best chair cover.....	Mrs. Dr. J. T. Enos	Salinas City	\$4 00
Second best chair cover.....	Mrs. H. J. Lind	Salinas City	\$2 00
Best lambrequin.....	Mrs. Dr. J. T. Enos	Salinas City	\$3 00
Best set of lamp mats.....	Mrs. J. B. Bennett.	Salinas City	\$1 00
Best embroidered fire screen.....	Mrs. Dr. J. T. Enos	Salinas City	\$3 00
Best wall panel or banner.....	Mrs. I. A. Tolman	Salinas City	\$1 50
Second best wall panel or banner.....	Mrs. Dr. J. T. Enos	Salinas City	\$1 00
Best sofa pillow.....	Mrs. J. B. Bennett.	Salinas City	\$3 00
Second best sofa pillow.....	Mrs. Dr. J. T. Enos	Salinas City	\$2 00
Best ottoman or stool.....	Mrs. M. L. Dexter	Salinas City	\$1 50
Best silk patchwork quilt.....	Mrs. R. L. Porter	Salinas City	\$2 00
Best braiding.....	Mrs. J. F. Birlem	Salinas City	\$1 50
Second best braiding.....	Mrs. J. B. Bennett.	Salinas City	\$1 00
Best knitting.....	Mrs. J. Callihan	Salinas City	\$2 00
Second best knitting.....	Mrs. L. H. Garrigus	Salinas City	\$1 50
Best couching embroidery.....	Mrs. H. S. Ball	Salinas City	\$1 50
Second best couching embroidery.....	Mrs. J. B. Bennett.	Salinas City	\$1 00
Best point lace.....	Mrs. S. W. Conklin	Salinas City	\$5 00
Second best point lace.....	Mrs. H. S. Ball	Salinas City	\$2 50
Best knitted quilt.....	Mrs. A. A. Richardson	Salinas City	\$2 00
Best fine lace work.....	Mrs. J. Callihan	Salinas City	\$2 00
Second best fine lace work.....	Mrs. J. B. Bennett.	Salinas City	\$1 50
Best article of Spanish work.....	Mrs. P. Zaballa	Salinas City	\$4 00
Second best article of Spanish work.....	Mrs. M. L. Dexter	Salinas City	\$2 00
Best darned tulle.....	Mrs. M. L. Dexter	Salinas City	\$1 50
Second best darned tulle.....	Mrs. G. A. Tolman	Salinas City	\$1 00
Best bead work.....	Mrs. W. S. Hunt	Salinas City	\$1 50
Second best bead work.....	Mrs. J. B. Bennett.	Salinas City	\$1 00
Best crazy silk bedquilt.....	Mrs. J. B. Bennett.	Salinas City	\$3 00
Second best crazy silk bedquilt.....	Miss Ariana Williams	Salinas City	\$2 00
Best cotton patchwork bedquilt.....	Mrs. J. B. Patton	Salinas City	\$2 00
Best knit or crochet shawl.....	Mrs. J. B. Bennett.	Salinas City	\$2 00
Best crochet bedquilt.....	Mrs. G. A. Tolman	Salinas City	\$2 00
Best moss work.....	Mrs. P. Kilburn	Salinas City	\$1 50
Best paper flowers.....	Mrs. M. L. Dexter	Salinas City	\$1 50
Best hammered brass.....	Mrs. H. S. Ball	Salinas City	\$1 00
Best toilet set.....	Mrs. J. B. Bennett.	Salinas City	\$2 00
Best crochet cotton tidy.....	Mrs. G. A. Tolman	Salinas City	\$1 00
Best macrame work.....	Mrs. P. Kilburn	Salinas City	\$2 00
Best canvas work.....	Mrs. J. B. Bennett.	Salinas City	\$1 50
Best crochet worsted tidy.....	Mrs. J. B. Bennett.	Salinas City	\$1 00
Best ornamental leather work.....	Mrs. J. B. Bennett.	Salinas City	\$2 00
Best lambrequin.....	Mrs. J. B. Bennett.	Salinas City	\$2 00
Best embroidered tidy.....	Miss A. Zaballa	Salinas City	\$1 50
Best crochet child's afghan.....	Mrs. J. B. Bennett.	Salinas City	\$2 00
Best worsted sofa cushion.....	Mrs. J. B. Bennett.	Salinas City	\$1 00
Best plain silk tidy.....	Mrs. C. Johnson	Salinas City	\$1 50
Best plain hemstitching.....	Mrs. H. S. Ball	Salinas City	\$1 00
Best wood carving.....	Thomas Wheeler	Salinas City	\$2 50
Best luster painting.....	Mrs. G. A. Tolman	Salinas City	\$1 00
Best plain needlework.....	Mrs. J. F. Birlem	Salinas City	\$2 00
Best hand-knit underwear.....	Mrs. W. A. Richardson	Salinas City	\$2 00
Second best hand-knit underwear.....	Mrs. L. H. Garrigus	Salinas City	\$1 50
Best exhibit of photography.....	DeGroat & Kellogg Francee & Burkman	Salinas City	\$20 00
Best exhibit of sign painting.....	E. G. Tolman	Salinas City	\$5 00
Best exhibit of carriage painting.....	J. B. Hickman	Salinas City	\$2 50
Best design for farm barn.....	J. B. Hickman	Salinas City	\$2 50
Best design for granary.....	J. B. Hickman	Salinas City	\$2 50
Best agricultural design.....	Mrs. J. B. Bennett.	Salinas City	\$2 50
Best original oil painting.....	Mrs. F. Cox	Salinas City	\$5 00
Best original oil painting from nature.....	Mrs. H. S. Ball	Salinas City	\$2 00
Best copy of oil painting.....	Miss Lou Dean	Salinas City	\$2 00
Best original crayon drawing.....	Mrs. J. B. Bennett.	Salinas City	\$2 00
Best original pencil drawing.....	Miss Myrtle Lean	Salinas City	\$2 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best kensington painting.....	Miss Chrissie Row- ling.....	Salinas City.....	\$2 50
Best oil painting in flowers.....	Mrs. F. Cox.....	Salinas City.....	\$2 50
Second best oil painting in flowers.....	Mrs. H. S. Ball.....	Salinas City.....	\$1 50
Best hand-painted china.....	Mrs. J. B. Bennett.....	Salinas City.....	\$2 50
Second best hand-painted china.....	Miss Ariana Wil- liams.....	Salinas City.....	\$1 50

SPEED PROGRAMME.

TUESDAY, OCTOBER 4, 1887.

RACE No. 1—TROTTING.

Two-year old colt stake of 1887. Mile heats; two in three. One hundred dollars added by association.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Aleck S, b. g., by Mambrino, Jr.	J. B. Iverson.....	Salinas City.
Junietta, br. m., by Junio.....	P. Kilburn.....	Salinas City.
St. Patrick, b. s., by Carr's Mambrino	J. H. Harris	Salinas City.
<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. St. Patrick.....	St. Patrick.....	1 1
2. Aleck S.....	Aleck S.....	2 2
3. Junietta.....	Junietta.....	3 3
<i>Time—2:57½; 3:00.</i>		

RACE No. 2—RUNNING.

For all horses owned in the district. Three-quarter mile and repeat. Purse, one hundred and fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady R, b. m., by Wildidle.....	P. Collins.....	Gonzales.
Dan Manning, bl. s., by Joe Hooker.....	M. P. Kelly.....	Gonzales.
Belle B, b. m., by Oliver Cromwell.....	John Leach.....	Salinas City.
<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Dan Manning.....	Lady R.....	1 1
2. Lady R.....	Belle B.....	2 2
3. Belle B.....	Dan Manning.....	3 dis.
<i>Time—1:19; 1:19½.</i>		

WEDNESDAY, OCTOBER 5, 1887.

RACE No. 3—TROTTING.

For named horses. Purse, two hundred and fifty dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Eagle, gr. g., by Echo.....	George Van Gorden.....	San Simeon.
Jim L, s. s., by Dan Voorhees.....	P. McCartney.....	Salinas City.
Charlie V, b. g., by Carr's Mambrino.....	Wm. Vanderhurst.....	Salinas City.
Maud H, ch. m., by Carr's Mambrino	J. H. Harris	Salinas City.

RACE No. 3—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Charlie V.....	Jim L..... 2 2 1 1 1
2. Eagle.....	Eagle..... 1 1 3 2 2
3. Jim L.....	Maud H..... 3 3 2 3 4
4. Maud H.....	Charlie V..... 4 4 4 4 3
<i>Time—2:37; 2:38½; 2:40; 2:37; 2:40.</i>	

Time—2:37; 2:38½; 2:40; 2:37; 2:40.

RACE No. 4—TROTTING.

Special. For named horses. Purse, two hundred dollars. Mile heats: three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Susie, b. m., by John Splaun	Chas. Lynde	Gilroy.
Santa Cruz Belle, bl. m., by Venture	Thos. Kennedy	Watsonville.
Allen L, s. s., by Dan Voorhees	James Larkin	Watsonville.
Jim Crow, b. g., by unknown	E. R. Wright	Gilroy.
Katisha, b. m., by unknown	George Berry	Santa Cruz.

<i>Position at Starting.</i>		<i>Position at Close.</i>			
1. Santa Cruz Belle		Allen L	1	1	3 1
2. Susie		Santa Cruz Belle	3	3	1 2
3. Jim Crow		Katisha	4	2	2 dis.
4. Allen L		Jim Crow	2		dis.
5. Katisha		Susie			dis.

Time—2:50; 2:44; 2:46½; 2:45.

THURSDAY, OCTOBER 6, 1887.

RACE No. 5—TROTTING.

For all horses that have never beaten five minutes for two miles. Purse, two hundred and fifty dollars. Two-mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Flora G, blk. m., by Altoona	P. McCartney	Salinas City.
Manzanita, s. g., by Elmo	J. Dwain	Salinas City.
Rube Brown, b. g., sire unknown	J. L. Carrigan	Salinas City.
Merchant, by Carr's Mambrino	J. D. Carr	Salinas City.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Flora G	Flora G 3 1 1
2. Manzanita	Manzanita 1 3 2
3. Merchant	Merchant 2 2 3
4. Rube Brown	Rube Brown 4 dis.

Time—5:30; 5:18½; 5:21.

TRANSACTIONS OF THE

RACE NO. 6—RUNNING.

For all two-year olds in the district. Purse, one hundred dollars. One half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Charley Luce, s. g., by Kingston	J. D. Carr	Salinas City.
Roundout, b. s., by Kingston	W. P. Kelly	Gonzales.
Kittie C, b. m., by Kingston	Cavanagh Bros.	Gonzales.
Position at Starting.		Position at Close.
1. Kittie C	Kittie C	1
2. Roundout	Charley Luce	2
3. Charley Luce	Roundout	3

Time—0:54.

FRIDAY, OCTOBER 7, 1887.

RACE NO. 7—TROTTING.

For all three-year olds in the district. Purse, one hundred and fifty dollars. Mile heats two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Capt. Kidd, br. s., by Pirate	P. Kilburn	Salinas City.
Mambrino Boy, b. s., by Carr's Mambrino	J. B. Iverson	Salinas City.
Billy Baxter, b. s., by Tom Vernon	J. Dwain	Salinas City.
Position at Starting.		Position at Close.
1. Mambrino Boy	Mambrino Boy	1 1
2. Capt. Kidd	Capt. Kidd	3 2
3. Billy Baxter	Billy Baxter	2 3

Time—2:49½; 2:47½.

RACE NO. 8—TROTTING.

Special, for yearlings. Purse, one hundred dollars. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Alf, b. s., by Electioneer, Jr.	N. Jessen	San Lucas.
Maud C, b. m., by Jim Mulvenna	J. R. Davidson	Salinas City.
Lady Sargent, gr. m., by Jim Mulvenna	Thos. Kennedy	Watsonville.
Jim Mulvenna, Jr., s. s., by Jim Mulvenna	J. D. Cochran	Gonzales.
Polly Hopkins, s. m., by Nutwood, Jr.	M. H. Clark	Gonzales.
Position at Starting.		Position at Close.
1. Polly Hopkins	Polly Hopkins	1 1
2. Jim Mulvenna, Jr.	Maud C	2 2
3. Alf	Jim Mulvenna, Jr.	3 3
4. Maud C	Alf	dis.
5. Lady Sargent	Lady Sargent	dis.

Time—4:00; 3:50½.

RACE NO. 9—RUNNING—NOVELTY RACE.

One mile and a quarter. Purse, one hundred and fifty dollars; first quarter, twenty-five dollars; second quarter, twenty-five dollars; third quarter, twenty-five dollars; fourth quarter, twenty-five dollars; fifth quarter, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Prince Victor, s. s., by Gen. McClellan	H. D. Livingston	King City.
Johnnie Innes, s. g., by Joe Hooker	A. Innes	Santa Cruz.
Lady R., b. m., by Wildidle	P. Collins	Gonzales.

Position at Starting.	Position at Close.
1. Johnnie Innes	Prince Victor
2. Prince Victor	Johnnie Innes
3. Lady R.	Lady R.

Time—0.24; 0.49; 1:18; 1:50; 2:21.

SATURDAY, OCTOBER 8, 1887.

RACE NO. 10—TROTTING—SPECIAL FOR NAMED HORSES.

Purse, one hundred and fifty dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady Johnson, br. m., by Carr's Mambrino	J. H. Harris	Salinas City.
Charlie V, b. g., by Carr's Mambrino	J. Dwain	Salinas City.
Santa Cruz Belle, bl. m., by Venture	A. Kennedy	Watsonville.
Lady Simpson, bl. m., unknown	A. C. Wood	Watsonville.
Katisha, b. m., unknown	Geo. Berry	Santa Cruz.

Position at Starting.	Position at Close.
1. Charlie V	Charlie V
2. Lady Johnson	Santa Cruz Belle
3. Santa Cruz Belle	Lady Johnson
4. Katisha	Katisha
5. Lady Simpson	Lady Simpson

Time—2:46½; 2:44; 2:44; 2:45; 2:47.

RACE NO. 11—TROTTING.

Free for all. Purse, two hundred and fifty dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Manzanita, s. g., by Elmo	J. Dwain	Salinas City.
Flora G, bl. m., by Altoona	P. McCartney	Salinas City.
May F, gr. m., by Warburton	C. A. Smith	San José.
Merchant, b. g., by Carr's Mambrino	J. D. Carr	Salinas City.

Position at Starting.	Position at Close.
1. Manzanita	May F
2. Flora G	Manzanita
3. May F	Flora G
Merchant (withdrawn)	

Time—2:35½; 2:30; 2:36½; 2:31½.

TRANSACTIONS

OF THE

EIGHTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the County of El Dorado.

OFFICERS OF THE ASSOCIATION.

THOS. FRASER	President.
GALUSHA CARPENTER	Secretary.
JOHN BLAIR	Treasurer.

DIRECTORS.

THOS. FRASER.....	Placerville, El Dorado County.
E. A. BOLES	Placerville, El Dorado County.
THOS. A. GALT.....	El Dorado, El Dorado County.
ALBERT NORRIS	Pleasant Valley, El Dorado County.
ISAAC EDDY.....	Placerville, El Dorado County.
J. C. MARSH.....	Placerville, El Dorado County.
R. ALDERSON, JR.....	Placerville, El Dorado County.
A. T. LEACHMAN	Salmon Falls, El Dorado County.

REPORT.

PLACERVILLE, October 28, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Eighth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

GALUSHA CARPENTER, Secretary.

RECEIPTS AND EXPENDITURES.

1887.	<i>Receipts.</i>		
Sept. 2—	To amount subscribed by citizens.....	\$595 00	
	To amount of Sacramento subscriptions.....	307 50	
			\$902 50
	To privileges—Pearson & Hilbert.....	\$55 00	
	Charles Murgotten.....	15 00	
	Varozza & Mell.....	100 00	
	Club rooms at Park.....	70 00	
	Pool privileges.....	77 50	
			377 50
	To race entries.....		440 00
	To advertising committee.....		61 50
	To Pavilion account—Whole tickets.....	\$269 50	
	Half tickets.....	14 40	
	Memberships.....	213 00	
	Season tickets.....	108 00	
	Exhibitors' badges.....	14 00	
	Term badges.....	3 00	
	Ball tickets.....	27 00	
	Plate account.....	10 04	
			658 94
	To Park account—Whole tickets.....	\$423 50	
	Half tickets.....	23 75	
	Memberships.....	69 00	
	Season tickets.....	21 00	
	Grand stand.....	27 75	
			565 00
	To receipts of ball.....		63 00
	To membership and season tickets sold by Secretary.....		121 00
	To cash advanced to be refunded from State appropriation.....		1,186 55
			\$4,375 99

1887.	<i>Expenditures.</i>		
Sept. 2—	By general expense account, stationery, etc.....	\$159 82	
	By salary account.....	75 05	
	By advertising and printing account.....	152 90	
	By Park expense account.....	558 17	
	By water account.....	10 00	
	By Pavilion account.....	\$160 50	
	By Pavilion account, rent.....	120 00	
			280 50
	By race account, purses paid.....	1,520 00	
	By entrance money refunded.....	20 00	
	By rent of office.....	16 00	
	By music account.....	394 00	
	By ticket refunded.....	3 00	
	By premiums paid on account.....	1,186 55	
			\$4,375 99

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS II.		
Colt, one year old, Clara	J. M. Bell	Placerville.
Stallion, two years old, Painkiller	H. E. Barton	Latrobe.
Filly, under one year old	G. L. Blakeley	Placerville.
Stallion, three years old, Tom Thumb	J. Knisley	El Dorado.
Stallion, over three years old, St. Lawrence	J. M. Bell	Placerville.
CLASS IV.		
Mare, over three years old, Queen	J. M. Bell	Placerville.
Stallion, three years old, Brigham Young	J. J. Miller	Placerville.
CLASS V.		
Gelding, three years old, Nemi	H. E. Barton	Latrobe.
CLASS VI.		
Buggy horse, Fred	J. I. Reed	Placerville.
Saddle horse, Cub	W. H. Blakeley	Placerville.
Span buggy horses, Lodi and St. Julian	J. Knisley	El Dorado.
CLASS VII.		
Stallion, one year old, LaRue	James Askew	El Dorado.
CLASS X.		
Durham bull, Tiger	Silas Brown	Pilot Hill.
Jersey bull, Warwick	Jas. Askew	El Dorado.
Jersey cow, Daisy	Jas. Askew	El Dorado.
Jersey cow, Princess	Jas. Askew	El Dorado.
Bull calf, Minnie	Geo. Askew	El Dorado.
Cow, one year old, Pet	Geo. Askew	El Dorado.
Heifer calf, Mayflower	Geo. Askew	El Dorado.
Shorthorn bull, Spot	D. H. Holdridge	Placerville.
CLASS XI.		
Jersey bull and family of three	Jas. Askew	El Dorado.
CLASS XII.		
Cow, four years old, Rosie	W. Hendrix	Placerville.
Heifer, Pet	Jas. Askew	El Dorado.
Cow, two years old, Susie	Geo. Askew	El Dorado.
Jersey heifer, Dollie	Geo. Askew	El Dorado.
Cow, three years old, Nellie	W. H. H. Fellows	Placerville.
CLASS XV.		
Boar (Berkshire), Bismarck	John Fink	Pleasant Valley.
Boar (Berkshire and China), Billie	Jas. Gaffney	Diamond Spr'gs.
Boar (Berkshire and China), Doc	Thos. Gaffney	Diamond Spr'gs.
Sow (Poland-China), Empress	Thos. Gaffney	Diamond Spr'gs.
CLASS XVI.		
Pigeons (English carrier)	Dr. R. W. Baum	Placerville.
Black Leghorns	Geo. Askew	El Dorado.
Brown Leghorns	Geo. Askew	El Dorado.
Pekin ducks	Geo. Askew	El Dorado.
Toulouse geese	Geo. Askew	El Dorado.
Best collection of poultry	Geo. Askew	El Dorado.
Game chickens	Marco Varozza	Placerville.
Plymouth Rocks	Marco Varozza	Placerville.
Buff Cochins	T. Dolan	Placerville.
Langshans	T. Dolan	Placerville.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS II.			
Colt, Clara	J. M. Bell	Placerville	\$2 40
Stallion, Painkiller	H. E. Barton	Latrobe	\$8 00
Filly, under one year	G. L. Blakeley	Placerville	\$2 40
Stallion, Tom Thumb	J. Knisley	El Dorado	\$15 00
Stallion, St. Lawrence	J. M. Bell	Placerville	\$10 00
CLASS IV.			
Mare, Queen	J. M. Bell	Placerville	\$6 00
Stallion, Brigham Young	J. J. Miller	Placerville	\$12 00
CLASS V.			
Gelding, Nemi	H. E. Barton	Latrobe	\$4 00
CLASS VI.			
Buggy horse, Fred	John I. Reed	Placerville	\$6 00
Saddle horse, Cub	W. A. Blakeley	Placerville	\$3 20
Span of buggy horses, Lodi and St. Julian	J. Knisley	El Dorado	\$12 00
CLASS VII.			
Stallion, one year old, LaRue	Jas. Askew	El Dorado	\$3 20
CLASS X.			
Durham bull, Tiger	Silas Brown	Pilot Hill	\$16 00
Jersey bull, Warwick	Jas. Askew	El Dorado	\$11 20
Jersey cow, Daisy	Jas. Askew	El Dorado	\$16 00
Jersey cow, Princess	Jas. Askew	El Dorado	\$11 20
Jersey calf, Effie	Geo. Askew	El Dorado	\$3 20
Jersey cow, Pet	Geo. Askew	El Dorado	\$6 00
Jersey heifer, May Blossom	Geo. Askew	El Dorado	\$3 20
Durham bull, Spot	D. H. Holdridge	Placerville	\$11 20
CLASS XI.			
Jersey bull, Duke of El Dorado, and family of three	Jas. Askew	El Dorado	\$16 00
CLASS XII.			
Cow, Rosie	W. Hendrix	Placerville	\$10 00
Heifer calf, Pet	Jas. Askew	El Dorado	\$8 00
Cow, Susie	Geo. Askew	El Dorado	\$6 00
Cow, Dollie	Geo. Askew	El Dorado	\$4 00
Cow, Nellie	W. H. H. Fellows	Placerville	\$6 00
CLASS XV.			
Boar (Berkshire)	John Fink	Pleasant Valley	\$4 80
Boar (Berkshire and China)	Jas. Gaffney	Diamond Sp'gs	\$4 80
Boar (Berkshire and China)	Thos. Gaffney	Diamond Sp'gs	\$2 40
Boar (Poland-China)	Thos. Gaffney	Diamond Sp'gs	\$3 20
CLASS XVI.			
English carrier pigeons	R. W. Baum	Placerville	\$2 50
Black Leghorns	Geo. Askew	El Dorado	\$2 00
Brown Leghorns	Geo. Askew	El Dorado	\$2 00
Pekin ducks	Geo. Askew	El Dorado	\$2 00
Toulouse geese	Geo. Askew	El Dorado	\$2 00
Best and largest collection of poultry	Geo. Askew	El Dorado	\$4 80
Game chickens	Marco Varozza	Placerville	\$2 00
Buff Cochins	Marco Varozza	Placerville	\$2 00
Plymouth Rocks	T. Dolan	Placerville	\$2 00
Langshans	T. Dolan	Placerville	\$2 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS III.			
Two-horse dead axle wagon	N. Wonderly	Placerville	\$10 00
Two-horse spring wagon	N. Wonderly	Placerville	\$10 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II.			
Case of machinists' tools	J. W. Eaton	Placerville	\$7 50
Range boilers	Weatherwax & Culbertson	Placerville	\$2 50
Bath tubs	Weatherwax & Culbertson	Placerville	\$2 50
CLASS III.			
Outside door	S. G. Beach	Placerville	\$0 80
Window blind	S. G. Beach	Placerville	\$0 80
Carpenter work	S. G. Beach	Placerville	\$2 40
Slate roofing	Leonard Reeg	Placerville	\$2 00
CLASS V.			
Illuminator, or clock lamp	J. J. Crawford	Placerville	\$5 00
Stuffed birds and animals	Mrs. Z. P. Brandon	Latrobe	\$7 50
Kindergarten work	Miss L. M. Bo- gardus	Placerville	\$5 00
Millinery	Mrs. I. B. Thomas	Placerville	\$7 50
Table cutlery	Weatherwax & Culbertson	Placerville	\$2 50
Soft soap	Mrs. M. Hendrix	Placerville	\$2 00

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
One half bushel wheat	Chas. McCuen	White Rock	\$5 00
One half bushel oats	Chas. McCuen	White Rock	\$2 00
One half bushel shelled corn	Chas. McCuen	White Rock	\$4 00
Ten pounds flax	Chas. McCuen	White Rock	\$2 50
Ten pounds hemp	Chas. McCuen	White Rock	\$2 50
Flour	Chas. Sibeck	Placerville	\$6 00
Oats	H. Tinney	Granite Hill	\$4 00
One half bushel shelled corn	W. D. Carpenter	Diamond Sp'gs.	\$2 00
One half bushel rye	W. D. Carpenter	Diamond Sp'gs.	\$2 00
One half bushel wheat	Geo. Blakeley	Placerville	\$2 50
One half bushel rye	Geo. Blakeley	Placerville	\$4 00
One half bushel barley	Geo. Blakeley	Placerville	\$4 00
CLASS II.			
Salsify	John Waters	Placerville	\$1 00
Indian corn	Chas. McCuen, Sr.	White Rock	\$4 00
Broomcorn	Chas. McCuen, Sr.	White Rock	\$4 00
Popcorn	Chas. McCuen, Sr.	White Rock	\$2 50
Potatoes	Chas. McCuen, Sr.	White Rock	\$5 00
Cauliflower	Chas. McCuen, Sr.	White Rock	\$3 50

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Parsnips	Chas. McCuen, Sr.	White Rock	\$2 00
Stock carrots	Chas. McCuen, Sr.	White Rock	\$1 00
Table carrots	Chas. McCuen, Sr.	White Rock	\$1 00
Squashes	Chas. McCuen, Sr.	White Rock	\$1 00
Largest squash	Chas. McCuen, Sr.	White Rock	\$2 00
Largest watermelon	Chas. McCuen, Sr.	White Rock	\$2 50
Muskmelons	Chas. McCuen, Sr.	White Rock	\$0 75
Largest exhibit of garden seeds	Chas. McCuen, Sr.	White Rock	\$3 75
Onions	H. L. Bryant.	Latrobe	\$2 00
Tomatoes	H. L. Bryant.	Latrobe	\$4 00
Red beets	H. L. Bryant.	Latrobe	\$1 00
Eclipse beets	H. L. Bryant.	Latrobe	\$1 00
Table carrots	H. L. Bryant.	Latrobe	\$2 00
Stock carrots	H. L. Bryant.	Latrobe	\$2 00
King pepper	H. L. Bryant.	Latrobe	\$1 00
Cucumbers	H. L. Bryant.	Latrobe	\$2 00
Eggplants	H. L. Bryant.	Latrobe	\$1 50
Sweet corn	H. L. Bryant.	Latrobe	\$2 00
Sweet corn	J. C. Marsh	Placerville	\$4 00
Tomatoes	J. C. Marsh	Placerville	\$2 00
Bayou beans	Geo. Askew	El Dorado	\$2 00
Collection garden seeds	Geo. Askew	El Dorado	\$7 50
Five pounds clover seed	Geo. Askew	El Dorado	\$3 00
Tuscarora corn	I. S. Bamber	Placerville	\$2 00
Squashes	Jacob Lyon	Placerville	\$2 00
Table beets	Jacob Lyon	Placerville	\$2 00
Stock beets	Jacob Lyon	Placerville	\$2 00
Cabbages	Jacob Lyon	Placerville	\$4 00
Watermelons	Jacob Lyon	Placerville	\$1 25
Muskmelons	Jacob Lyon	Placerville	\$1 50
Onions	Philip Kramp	Diamond Sp'gs.	\$4 00
Cabbages	Philip Kramp	Diamond Sp'gs.	\$2 00
Potatoes	Philip Kramp	Diamond Sp'gs.	\$3 50
Potatoes	S. R. Tripp	Placerville	\$7 50
Muskmelons (yellow)	S. R. Tripp	Placerville	\$1 50
Pumpkin (best)	P. Williamson	Placerville	\$2 00
Pumpkins	P. Williamson	Placerville	\$1 00
Flowers in bloom	John Waters	Placerville	\$6 00
Ornamental plants	John Waters	Placerville	\$6 00
Ornamental grasses	John Waters	Placerville	\$2 00
Skeleton leaves	Mrs. J. I. Reid	Placerville	\$2 00
Flowering plants	Miss A. L. Tindall	Placerville	\$4 00
Ornamental foliage	Miss A. L. Tindall	Placerville	\$3 00
Cut flowers	Miss A. L. Tindall	Placerville	\$2 00
Ferns	Miss A. L. Tindall	Placerville	\$2 00
Hanging baskets	Mrs. O'Donnell	Placerville	\$2 00
Bouquet cut flowers	Mrs. P. Vignant	Placerville	\$2 00
Flowering plants	August Vignant	Placerville	\$3 00
CLASS IV.			
Twenty pounds firkin butter	James Askew	El Dorado	\$5 00
Six pounds roll butter	George Askew	El Dorado	\$2 00
Twenty pounds firkin butter	George Askew	El Dorado	\$3 00
Six pounds roll butter	S. R. Tripp	Placerville	\$5 00
Ten pounds lard	Mrs. Kramp	Diamond Sp'gs.	\$3 00
Ten pounds lard	Mrs. M. Hendrix	Placerville	\$2 00
CLASS V.			
Rye bread	Mrs. Kramp	Diamond Sp'gs.	\$1 50
Brown bread	Mrs. Kramp	Diamond Sp'gs.	\$1 50
Graham bread	Mrs. Kramp	Diamond Sp'gs.	\$1 50
Wheat bread	Mrs. M. Hendrix	Placerville	\$1 50
Plate raised biscuits	Mrs. M. Hendrix	Placerville	\$1 50
Best domestic bread	Mrs. M. Maynard	Placerville	\$4 00
Two loaves corn bread	Mrs. N. O. Ames	Placerville	\$1 50
Salt rising bread	Mrs. N. O. Ames	Placerville	\$1 50
Wheat bread	Miss C. Hunger	Placerville	\$3 00
Plate biscuit	Mrs. R. Reid	Placerville	\$1 50

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Blackberries	John Waters	Placerville	\$1 00
Raspberries	John Waters	Placerville	\$0 80
Apples	Steve Weymouth	Placerville	\$3 00
Plums	Steve Weymouth	Placerville	\$7 50
Figs	I. S. Bamber	Placerville	\$3 50
Apples	I. S. Bamber	Placerville	\$4 50
Pears	I. S. Bamber	Placerville	\$7 50
Peaches	I. S. Bamber	Placerville	\$6 00
Plums	I. S. Bamber	Placerville	\$4 50
Plums	A. S. Cook	Placerville	\$3 00
Nectarines	J. C. Marsh	Placerville	\$2 50
Plums	J. C. Marsh	Placerville	\$6 00
Best display peaches	J. C. Marsh	Placerville	\$7 50
Best display figs	Mrs. E. Knighton	Placerville	\$5 00
Prunes	Thomas Fraser	Placerville	\$3 00
Best display grapes	Thomas Hardie	Placerville	\$7 50
Table grapes	Thomas Hardie	Placerville	\$5 00
Best display apples	W. B. Sower	Fairplay	\$7 50
Peaches	El Dorado Fruit Company	Diamond Sp'gs	\$3 00
Pears	Jacob Lyon	Placerville	\$3 00
Best exhibition nectarines	Jacob Lyon	Placerville	\$5 00
Prunes	P. Kramp	Diamond Sp'gs	\$1 50
Best exhibition wine grapes	P. Kramp	Diamond Sp'gs	\$7 50
Strawberries	W. D. Carpenter	Diamond Sp'gs	\$1 00
Fine display fruit	W. D. Carpenter	Diamond Sp'gs	\$10 00
Pears	S. R. Tripp	Placerville	\$6 00
Peaches	Wm. Hendrix	Placerville	\$4 50
Apples	Robert McKay	Coloma	\$6 00
Pears	Robert McKay	Coloma	\$4 50
Best display prunes	Robert McKay	Coloma	\$7 50
Best display table grapes	Robert McKay	Coloma	\$7 50
Wine grapes	Robert McKay	Coloma	\$5 00
CLASS II.			
Sun-dried apples	Chas. McCuen	White Rock	\$4 00
Sun-dried plums	Chas. McCuen	White Rock	\$4 00
Dried berries	Chas. McCuen	White Rock	\$1 50
Best exhibit of peanuts	Chas. McCuen	White Rock	\$2 00
Best exhibit of chestnuts	Steve Weymouth	Placerville	\$2 00
Best ten pounds of sun-dried pears	Mrs. I. S. Bamber	Placerville	\$4 00
Apricots	Mrs. I. S. Bamber	Placerville	\$1 50
Best exhibit of nectarines	Mrs. I. S. Bamber	Placerville	\$3 00
Best sun-dried plums	Mrs. I. S. Bamber	Placerville	\$4 00
Best sun-dried figs	Mrs. I. S. Bamber	Placerville	\$3 00
Best sun-dried blackberries	Mrs. I. S. Bamber	Placerville	\$3 00
Dried raisins	Mrs. I. S. Bamber	Placerville	\$5 00
Seedless raisins	Mrs. I. S. Bamber	Placerville	\$4 00
Kiln-dried pears	P. J. Isbell	Placerville	\$2 00
Best sun-dried peaches	P. J. Isbell	Placerville	\$4 00
Kiln-dried nectarines	P. J. Isbell	Placerville	\$1 50
Best kiln-dried prunes	P. J. Isbell	Placerville	\$4 00
Best kiln-dried berries	P. J. Isbell	Placerville	\$3 00
Best kiln-dried apples	A. S. Cook	Placerville	\$4 00
Best kiln-dried pears	A. S. Cook	Placerville	\$4 00
Plums	A. S. Cook	Placerville	\$2 00
Best kiln-dried peaches	A. S. Cook	Placerville	\$4 00
Dried prunes	A. S. Cook	Placerville	\$2 00
Best kiln-dried figs	A. S. Cook	Placerville	\$3 00
Dried plums	Mrs. E. Knighton	Placerville	\$2 00
Best display and quality of raisins	Thomas Hardie	Placerville	\$7 50
Nectarines	Henry Tinney	Granite Hill	\$1 50
Dried plums	Henry Tinney	Granite Hill	\$2 00
Dried peaches	Jacob Lyon	Placerville	\$2 00
Dried apples	W. D. Carpenter	Diamond Sp'gs	\$2 00
Dried plums	W. D. Carpenter	Diamond Sp'gs	\$4 00
Dried apricots	W. D. Carpenter	Diamond Sp'gs	\$2 40

FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Sun-dried nectarines	W. D. Carpenter.	Diamond Sp'gs.	\$3 00
Sun-dried figs	W. D. Carpenter.	Diamond Sp'gs.	\$1 50
Best display of dried fruits	W. D. Carpenter.	Diamond Sp'gs.	\$7 50
Best sun-dried apricots	W. D. Carpenter.	Diamond Sp'gs.	\$3 00
Best soft-shelled almonds	W. D. Carpenter.	Diamond Sp'gs.	\$2 00
Dried apples	August Vignat	Placerville	\$2 00
Dried pears	August Vignat	Placerville	\$2 00
Best English walnuts	A. Eidinger	Placerville	\$2 00
Dried peaches	Thos. Ward.	Placerville	\$2 00
Best Italian chestnuts	Mrs. M. Hendrix.	Placerville	\$2 00
CLASS III.			
Best jams	Miss L. E. Campini	Placerville	\$4 00
Pickles	Miss L. E. Campini	Placerville	\$2 00
Best fruit in glass	Mrs. I. S. Bamber.	Placerville	\$4 00
Best preserves	Mrs. I. S. Bamber.	Placerville	\$3 20
Jams	Mrs. I. S. Bamber.	Placerville	\$3 00
Best jellies	Mrs. I. S. Bamber.	Placerville	\$4 00
Jellies	Miss C. Overwater.	El Dorado	\$3 00
Best pickles	Miss C. Overwater.	El Dorado	\$3 00
Fruit in glasses	Miss Lulu Carpenter	Diamond Sp'gs.	\$3 00
Best display	Mrs. I. S. Bamber.	Placerville	\$3 50
CLASS IV.			
Best grape brandy	Philip Kramp	Diamond Sp'gs.	\$4 00
Best apple brandy	Philip Kramp	Diamond Sp'gs.	\$3 20
Best dry white wine	Philip Kramp	Diamond Sp'gs.	\$3 20
Best sweet wine	Philip Kramp	Diamond Sp'gs.	\$3 20
Best claret	Philip Kramp	Diamond Sp'gs.	\$3 20
Best port	Philip Kramp	Diamond Sp'gs.	\$3 20
Best sherry	Philip Kramp	Diamond Sp'gs.	\$3 20
Best champagne	Philip Kramp	Diamond Sp'gs.	\$3 20

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Embroidered handkerchief	Mrs. C. H. Weatherwax	Placerville	\$1 50
Point lace work	Mrs. C. H. Weatherwax	Placerville	\$2 50
Arasene banner	Miss B. Landecker	Placerville	\$3 50
Sofa cushion	Miss B. Landecker	Placerville	\$2 00
Tidy	Miss B. Landecker	Placerville	\$1 50
Decorated easel	Miss B. Landecker	Placerville	\$1 50
Fancy work	Mrs. F. Engesser.	Green Valley	\$5 00
Applique work	Mrs. J. I. Reed	Placerville	\$2 50
Braided work	Mrs. J. I. Reed	Placerville	\$2 50
Lambrequin	Mrs. J. I. Reed	Placerville	\$2 00
Embroidered table cover	Mrs. J. I. Reed	Placerville	\$3 50
Canvas work	Mrs. J. I. Reed	Placerville	\$3 00
Knitted bedspread	Mrs. A. E. Olmstead	Placerville	\$3 00
Crochet bedspread	Miss L. E. Campini	Placerville	\$3 50
Knit wool stockings	V. J. Campini.	Placerville	\$2 00
Crazy quilt	Mrs. G. E. Morey.	Placerville	\$4 00
Darned net work	Mrs. G. E. Morey.	Placerville	\$3 00
Rag door mat	Mrs. G. E. Morey.	Placerville	\$2 50
Pillow sham	Miss Lily Crippin.	Placerville	\$3 00
Knit undervest	Miss G. Burnham.	Placerville	\$1 50

SIXTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Arasene embroidery	Mrs. J. J. Crawford	Placerville	\$2 00
Ribbon work	Mrs. J. J. Crawford	Placerville	\$2 50
Ornamental panel	Mrs. J. J. Crawford	Placerville	\$3 50
Handkerchief box	Mrs. J. J. Crawford	Placerville	\$2 00
Pincushion	Mrs. J. J. Crawford	Placerville	\$1 50
Kensington work	Mrs. J. J. Crawford	Placerville	\$3 50
Best display in class	Mrs. J. J. Crawford	Placerville	\$6 00
Kensington work	Miss C. Overwater	Placerville	\$2 00
Picture frame	Miss C. Overwater	Placerville	\$2 00
Carriage afghan	Mrs. B. G. Parlow	Placerville	\$3 00
Toilet set	Mrs. B. G. Parlow	Placerville	\$3 50
Chenille work	Mrs. E. W. Witmer	Placerville	\$2 50
Collar box	Mrs. E. W. Witmer	Placerville	\$1 50
Crochet shawl	Mrs. E. W. Witmer	Placerville	\$3 50
Hearth rug	Mrs. O'Donnell	Placerville	\$2 50
Ottoman cover	Mrs. O'Donnell	Placerville	\$2 00
Crochet shawl	Mrs. H. Gardner	Pleasant Valley	\$3 00
Child's afghan	Mrs. H. Gardner	Pleasant Valley	\$2 50
Outline embroidery	Mrs. H. Gardner	Pleasant Valley	\$2 00
Suit ladies' underwear	Mrs. H. Gardner	Pleasant Valley	\$4 00
Kensington table scarf	Mrs. J. I. Reed	Placerville	\$3 50
Knitted lace	Mrs. S. R. Tripp	Placerville	\$1 50
Patchwork quilt	Miss M. Church	Placerville	\$2 00
Crochet and cloth bedspread	Miss M. Church	Placerville	\$2 00
Piano mats	Miss M. Hilbert	Placerville	\$1 00
Paper flowers	Miss A. Alderson	Placerville	\$2 00
Home-made dress	Miss E. Larned	Placerville	\$3 50
CLASS II.			
Crochet work	Erla Witmer	Placerville	\$1 50
Crochet slippers	Mattie Williams	Placerville	\$2 50
Pincushion	Mattie Williams	Placerville	\$2 50

SEVENTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Fruit pieces, original	Miss A. Landecker	Placerville	\$4 80
Best collection of paintings	Miss A. Landecker	Placerville	\$4 80
CLASS II.			
Best crayon drawings	Miss L. Weatherwax	Placerville	\$2 00
CLASS III.			
Two oil paintings	Miss B. Landecker	Placerville	\$4 00
Five oil paintings	Miss B. Landecker	Placerville	\$2 40
CLASS IV.			
Oil painting, original	Miss L. Weatherwax	Placerville	\$2 40
Crayon work, landscape	Miss L. Weatherwax	Placerville	\$2 00
Crayon work, animal	Miss L. Weatherwax	Placerville	\$2 00
Pencil work, landscape	Miss L. Weatherwax	Placerville	\$1 20
Pencil work, animal	Miss L. Weatherwax	Placerville	\$1 20

SEVENTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS V.			
Photographic views	Geo. D. Stewart	Placerville	\$6 00
Photographic views	Kies & Brian	Placerville	\$2 50

SPECIAL PREMIUMS ON FRUIT, 1887.

OR THE J. & J. BLAIR SPECIAL PREMIUM.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best general display of fruit	R. B. McKay	Coloma	\$65 00
Second best display of fruit	J. C. Marsh	Placerville	\$35 00

SPECIAL PREMIUMS ON VEGETABLES.

OR THE W. H. H. FELLOWS SPECIAL PREMIUM.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best general display of vegetables	Jacob Lyon	Placerville	\$30 00
Second best display of vegetables	C. H. McCuen	White Rock	\$20 00

SPEED PROGRAMME.

TUESDAY, AUGUST 30, 1887.

RACE NO. 1—RUNNING.

Free to district horses. Purse, two hundred dollars. One hundred and twenty dollars to first; sixty dollars to second; twenty dollars to third. Five eighths of a mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Charley N, by Norfolk; dam unknown	John Nikolaus.....	Grizzly Flat.
Bay Rum, by Bayswater; dam, Nora	J. Knisley	El Dorado.
Minnie R, by Scamperdown; dam, Sallie Blayer.	E. Flittner.....	Placerville.
Maud, by Leinster; dam, Nellie O'Malley	Hi. Barton.....	Latrobe.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Charley N.....	Minnie R..... 1 1
2. Maud	Bay Rum..... 3 2
3. Bay Rum	Maud..... 2 3
4. Minnie R.....	Charley N..... dis.

Time—1:08; 1:09.

RACE NO. 2—RUNNING.

For all saddle horses without record, owned in the district. Purse, fifty dollars. Fifteen dollars to second; five dollars to third. Half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Charley N, by Norfolk; dam unknown.....	John Nikolaus.....	Grizzly Flat.
Minnie B, by Leinster; dam, Young Weasel	Hi. Barton.....	Latrobe.
Tom Thumb, by Kent; dam, Lodi	J. Knisley	El Dorado.
Josie H, by Joe Hooker; dam, Nellie W	J. L. Zuver.....	Buckeye.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Josie H.....	Minnie B..... 1
2. Minnie B.....	Josie H..... 2
3. Tom Thumb	Charley N..... 3
4. Charley N.....	Tom Thumb..... 4

Time—0:54.

WEDNESDAY, AUGUST 31, 1887.

RACE NO. 3—RUNNING.

For all two-year olds in El Dorado, Amador, and Calaveras Counties. Purse, one hundred and fifty dollars. Thirty-six dollars to second; twelve dollars to third. Five eighths of a mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie B, by Leinster; dam, Young Weasel	H. E. Barton.....	Latrobe.
Oscar Wilde, by Don Victor; dam, Esther	E. Flittner.....	Placerville.
Jim Douglas, Jr.	J. L. Zuver.....	Buckeye Flat.

Position at Starting.	Position at Close.
1. Oscar Wilde	Minnie B
2. Minnie B	Oscar Wilde
3. Jim Douglas, Jr.	Jim Douglas, Jr.

Time—1:09½.

RACE NO. 4—SPECIAL TROTTING.

For named horses. Purse, two hundred and fifty dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bay Frank, by Tornado; dam, State of Maine	J. R. Hodson.....	Sacramento.
Clara G, by Elmont; dam, a thoroughbred	S. C. Tryon.....	Sacramento.
Franklin, by General Reno; dam, unknown	Pete Tietjens	Sacramento.

Position at Starting.	Position at Close.
1. Clara G	Clara G
2. Bay Frank	Franklin.....
3. Franklin	Bay Frank.....

Time—2:46; 2:48; 2:45½; 2:43; 2:50.

THURSDAY, SEPTEMBER 1, 1887.

RACE NO. 5—RUNNING.

Free for all. Three quarters of a mile and repeat. Purse, four hundred dollars. One hundred and twenty dollars to second, and forty dollars to third.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
May Blossom, by Joe Hooker; dam, Maggie S.	W. P. Todhunter.....	Sacramento.
Minnie B, by Scamperdown; dam, Sallie Blayer	E. Flittner.....	Placerville.
Jennie B, by McMahon; dam, by Lodi	Hi. Barton.....	Latrobe.
Bay Rum, by Bayswater; dam, Norfolk mare.	J. Knisley	El Dorado.

Position at Starting.	Position at Close.
1. May Blossom	May Blossom
2. Bay Rum	Bay Rum
3. Jennie B	Jennie B

Time—1:20½; 1:18½.

RACE No. 6—RUNNING.

For all three-year olds owned in El Dorado, Amador, and Calaveras Counties. One half mile and repeat. Purse, two hundred and fifty dollars. Sixty dollars to second, and twenty dollars to third.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maud, by Leinster; dam, Nellie O'Malley	Hi. Barton	Latrobe.
Oscar Wilde, by Don Victor; dam, Esther	E. Flittner	Placerville.
Josie H, by Joe Hooker; dam, Nellie W	J. L. Zuver	Buckeye Flat.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Josie H	Maud
2. Maud	Josie H
3. Oscar Wilde	Oscar Wilde

Time—0:56½; 0:54¾; 0:57.

FRIDAY, SEPTEMBER 2, 1887.

RACE No. 7—RUNNING.

For named horses. Five eighths of a mile dash. Purse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie R, by Scamperdown; dam, Sallie Blayer.	E. Flittner	Placerville.
Minnie B, by Leinster; dam, Young Weasel	Hi. Barton	Latrobe.
May Blossom, by Joe Hooker; dam, Maggie S	W. P. Todhunter	Sacramento.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. May Blossom	May Blossom
2. Minnie R	Minnie R
3. Minnie B	Minnie B

Time—1:06½.

RACE No. 8—RUNNING.

Free for all in the Counties of El Dorado, Amador, and Calaveras. One half mile and repeat. Purse, two hundred dollars. Forty-eight dollars to second, and sixteen dollars to third.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Black Oak, by unknown; dam, unknown	Hi. Barton	Latrobe.
Norton, by Bayswater; dam, unknown	Anthony Smith	Tyffe.
Minnie R, by Scamperdown; dam, Sallie Blayer.	E. Flittner	Placerville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Minnie R	Minnie R
2. Black Oak	Norton
3. Norton	Black Oak

Time—0:50¾; 0:52; 0:56.

TRANSACTIONS

OF THE

NINTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Del Norte and Humboldt.

OFFICERS OF THE ASSOCIATION.

G. C. BARBER.....	President.
A. W. MOCK.....	Secretary.
L. FEIGANBAUM.....	Treasurer.

DIRECTORS.

G. C. BARBER.....	Ferndale.
S. F. PINE.....	Eureka.
R. J. BUGBEE.....	Ferndale.
J. D. BARBER.....	Hydesville.
C. L. THOMPSON.....	Camp Grant.
ALEX. MASSON.....	Rohnerville.
B. H. McNEIL.....	Rohnerville.
H. C. RAWSON.....	Crescent City.

REPORT.

FEBRUARY 6, 1888.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Ninth District Agricultural Association submit this, their report of the transactions of said association, for the year ending December 31, 1887.

A. W. MOCK, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Received at the gate.....	\$2,596 20
Received from tickets sold	51 00
Received from privileges	503 12
Received from pools	50 00
Received from proceeds of ball	151 50
Received from donations	55 00
Received from entrance fee	641 00
Received from feed sold	10 25
Received from the State.....	1,000 00
	<hr/> \$5,058 07

Disbursements.

Paid for printing and advertising	\$261 40
Paid for music	244 50
Paid for lumber and shingles.....	94 37
Paid for hay and feed	107 73
Paid for watering and work on track	70 24
Paid for interest and insurance.....	100 44
Paid to Jockey Club and Town Hall.....	70 00
Sundry accounts, as per bills and vouchers with Secretary	748 72
	<hr/> \$1,697 40
Paid for premiums	1,466 50
Paid for purses	1,455 00
Old balance	400 00
Balance in favor of association.....	39 17
	<hr/> \$5,058 07

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGHBRED HORSES—STALLIONS.		
<i>Four Years Old and Over.</i>		
Sampson	J. R. Jorden	Rohnerville.
MARES.		
<i>Four Years Old and Over, with Colt.</i>		
Black Maria	A. H. Knight	Table Bluff.
Kitty Cade	A. H. Knight	Table Bluff.
Lottie Duffie	A. H. Knight	Table Bluff.
MARES OR GELDINGS.		
<i>Three Years Old.</i>		
Queen of Spades	A. H. Knight	Table Bluff.
<i>Two Years Old.</i>		
Chestnut filly	A. H. Knight	Table Bluff.
<i>Suckling Colt.</i>		
Queen Norfolk	A. H. Knight	Table Bluff.
CLASS II—HORSES OF ALL WORK—STALLIONS.		
<i>Four Years Old and Over.</i>		
Farmer Boy	John Evarts	Petrolia.
Lafayette, Jr.	Curt Lewis	Ferndale.
Norman Ned	F. W. Coady	Garberville.
<i>Two Years Old and Over.</i>		
Nimrod	Alex. Forbes	Eureka.
MARES.		
<i>Four Years Old and Over, with Colt.</i>		
Kate	Giles Patrick	Ferndale.
Mother Hubbard	R. J. Bugbee	Ferndale.
Neil	B. F. Forbes	Eureka.
Minnie	H. Drake	Rohnerville.
Julia	H. A. Myrick	Rohnerville.
Kate	J. M. Hess	Rohnerville.
Nellie	O. Mills	Eureka.
Puss	Alex. Forbes	Eureka.
Hester	Alex. Forbes	Eureka.
MARES OR GELDINGS.		
<i>Three Years Old.</i>		
May	Giles Patrick	Ferndale.
<i>Two Years Old.</i>		
Dick	Giles Patrick	Ferndale.
Kate	P. M. Johnson	Rohnerville.
<i>One Year Old.</i>		
Farmer	Neil Friel	Ferndale.
May Queen	Alex. Forbes	Eureka.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Suckling Colt.</i>		
Champak	Giles Patrick	Ferndale.
Pacific Boy	R. J. Bugbee	Ferndale.
Altalfa	C. L. Thompson	Camp Grant.
Myet	Alex. Forbes	Eureka.
CLASS III—DRAFT HORSES—STALLIONS.		
<i>Four Years Old and Over.</i>		
Providence	W. H. E. Smith	Rohnerville.
Val Jean	W. H. E. Smith	Rohnerville.
Canadian King	T. J. Knight	Table Bluff.
<i>Two Years Old and Over.</i>		
Billie	John Winslow	Eureka.
Norman	Patrick Kelley	Ferndale.
Defiance	R. H. Parsons	Ferndale.
MARES.		
<i>Four Years Old and Over, with Colt.</i>		
Lacy	John Winslow	Eureka.
Lady Gray	J. L. Douglass	Rohnerville.
Lizzie	John Winslow	Eureka.
Lady Gray	A. D. Smith	Rohnerville.
MARES OR GELDINGS.		
<i>Three Years Old.</i>		
Nellie	N. Hurlburt	Ferndale.
Rowdy	John McDonough	Ferndale.
Susie	N. Hurlbert	Ferndale.
<i>Two Years Old.</i>		
Doll	James Lawson	Ferndale.
<i>One Year Old.</i>		
Nellie	Patrick Kelley	Ferndale.
Laura	J. L. Douglass	Rohnerville.
<i>Suckling Colt.</i>		
Dinah	J. L. Douglass	Rohnerville.
Billie	J. M. Hess	Rohnerville.
CLASS IV—ROADSTERS—STALLIONS.		
<i>Four Years Old and Over.</i>		
Patchen	T. J. Knight	Table Bluff.
Go Bang	T. D. Felt	Rohnerville.
Grand Moor	W. H. E. Smith	Rohnerville.
Zanoni	W. H. E. Smith	Rohnerville.
<i>Three Years Old and Over.</i>		
Ira	W. H. Cooper	Eureka.
<i>Two Years Old.</i>		
Prince Hayward	P. H. Quinn	Eureka.
Johnnie	J. F. Quill	Table Bluff.
Challenge	J. Minor	Arcata.
Major	Al. Leach	Rohnerville.
<i>One Year Old.</i>		
.....	A. B. Huyck	Slide.
MARES.		
<i>Four Years Old and Over, with Colt.</i>		
Lady Felt	R. J. Bugbee	Ferndale.
Fillie	A. D. Smith	Rohnerville.
Nellie	F. D. Felt	Rohnerville.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
Nell	A. D. Smith	Rohnerville.
Flora	Peter Hauck	Rohnerville.
Jennie	H. A. Myrick	Rohnerville.
MARES OR GELDINGS.		
<i>Three Years Old.</i>		
Victor	J. L. Eby	Rohnerville.
Pete Steinway	M. Groton	Rohnerville.
<i>Two Years Old.</i>		
Maud M	Wyman Murphy	Slide.
Junebug	P. H. Quinn	Eureka.
Silver Shield	A. A. Frank	Rohnerville.
Billy the Kid	M. Parrott	Rohnerville.
Alex	J. E. Brown	Ferndale.
<i>One Year Old.</i>		
Johnnie Moor	S. W. Douglass	Rohnerville.
Poscorina	J. L. Eby	Rohnerville.
Lee Moor	M. Parrott	Rohnerville.
<i>Suckling Colt.</i>		
May	P. Hauck	Rohnerville.
Topsy	O. Mills	Eureka.
Girl	A. J. Bugbee	Ferndale.
Queen	H. Drack	Rohnerville.
Moor	H. A. Myrick	Rohnerville.
Rapidan	A. D. Smith	Rohnerville.
CLASS V—DOUBLE TEAMS.		
<i>Matched in Color and Style; owned and used by one person as such.</i>		
Cyclone and May	A. D. Gordon	Iqua.
CLASS VI—SADDLE HORSES.		
Cora	C. L. Thompson	Camp Grant.
.....	Arthur Johnson	Rohnerville.
Rio Dell Roan	John Pedrotte	Rio Dell.
CLASS VII—MULES—PAIRS.		
Pete and Sam	W. S. Robinson	Bridgeville.
Bert and Queen	B. Robinson	Ferndale.
Tom and Jack	W. S. Robinson	Bridgeville.
CLASS I—CATTLE—DURHAMS—BULLS.		
<i>Three Years Old and Over.</i>		
Alex	J. Davenport	Ferndale.
Johnny	W. Samuels	Ferndale.
<i>Bull Calves.</i>		
Second Duke of Mad River	S. S. Loreson	Arcata.
Redwood	Alex. Forbes	Eureka.
COWS.		
<i>Three Years Old and Over.</i>		
Lady	D. M. Bryant	Ferndale.
<i>One Year Old.</i>		
Donnie	D. M. Bryant	Ferndale.
JERSEYS AND ALDERNEYS, IN ONE CLASS—BULLS.		
<i>Three Years Old and Over.</i>		
Jack	J. Fitzell	Hydesville.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
AYRSHIRES—BULLS.		
<i>Three Years Old and Over.</i>		
Scotland	N. Hurlburt	Ferndale.
Victor	N. Hurlburt	Ferndale.
<i>One Year Old.</i>		
Roy	N. Hurlburt	Ferndale.
<i>Bull Calf.</i>		
Ranger	N. Hurlburt	Ferndale.
COWS.		
<i>Three Years Old.</i>		
Maud	N. Hurlburt	Ferndale.
Cora	N. Hurlburt	Ferndale.
<i>Two Years Old.</i>		
Silva	N. Hurlburt	Ferndale.
<i>Heifer Calf.</i>		
Zip	N. Hurlburt	Ferndale.
HOLSTEINS—BULLS.		
<i>Three Years Old and Over.</i>		
Bismarck	S. F. Pine	Eureka.
<i>Two Years Old.</i>		
Bismarck	John G. Graham	Eureka.
<i>One Year Old.</i>		
Dermott 2d	Alex. Forbes	Eureka.
Dick	S. F. Pine	Eureka.
<i>Bull Calves.</i>		
Elko	Alex. Forbes	Eureka.
Elkwood	Alex. Forbes	Eureka.
COWS.		
<i>Three Years Old.</i>		
Portio Lincoln	Alex. Forbes	Eureka.
Puritan	Alex. Forbes	Eureka.
Orphan Queen	Alex. Forbes	Eureka.
Katie	S. F. Pine	Eureka.
Mary	S. F. Pine	Eureka.
<i>Heifer Calves.</i>		
Susie	S. F. Pine	Eureka.
Rosabell Stratmore	Alex. Forbes	Eureka.
Sweetbriar	Alex. Forbes	Eureka.
HEREFORDS—BULLS.		
<i>Three Years Old and Over.</i>		
Prince Leopold	Ira A. Russ	Ferndale.
GRADED CATTLE—BULLS.		
<i>Two Years Old.</i>		
Billy	C. Decarlie	Ferndale.
Brigham	W. Samuels	Ferndale.
Blucher	Ira A. Russ	Ferndale.
<i>One Year Old.</i>		
Challenge	Ira A. Russ	Ferndale.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>Bull Calves.</i>		
Daniel Webster	W. Jacobson	Ferndale.
.....	John G. Graham	Eureka.
.....	W. Samuels	Ferndale.
.....	John G. Graham	Eureka.
COWS.		
<i>Three Years Old.</i>		
Susie	J. Reynolds	Rohnerville.
Fannie	D. M. Bryant	Ferndale.
Princess	D. M. Bryant	Ferndale.
<i>Two Years Old.</i>		
Betsy	D. M. Bryant	Ferndale.
Jane	J. Reynolds	Rohnerville.
Rosa	D. M. Bryant	Ferndale.
<i>One Year Old.</i>		
Beauty	H. A. Myrick	Rohnerville.
Mabel	A. Forbes	Eureka.
Mula	A. Forbes	Eureka.
CLASS I—SHEEP—COTSWOLD RAMS.		
Prince	T. J. Knight	Table Bluff.
Ram	T. J. Knight	Table Bluff.
Merino ram	T. J. Knight	Table Bluff.
Shropshire ram	W. Samuels	Ferndale.
Five Cotswold ewes	T. J. Knight	Table Bluff.
Five Merino rams and ewes	T. J. Knight	Table Bluff.
CLASS II—GRADED.		
Ram	W. Samuels	Ferndale.
Five ewes	T. J. Knight	Table Bluff.
SWINE.		
Berkshire sow	A. H. Knight	Table Bluff.
Berkshire sow	A. H. Knight	Table Bluff.
Essex boars	A. H. Knight	Table Bluff.
Poland-China boar, Jack	W. Samuels	Ferndale.
Poland-China sow, Daisy	W. Samuels	Ferndale.
POULTRY.		
Lot of poultry	Mat. Robinson	Ferndale.
One pair geese	Mrs. N. Hauck	Rohnerville.
One pair geese	J. P. Godfrey	Hydesville.
One pair turkeys	John Palmer	Hydesville.
One pair turkeys	J. P. Godfrey	Hydesville.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS 1—THOROUGHEREDS.			
Stallion, Sampson	J. R. Jordan	Rohnerville	\$18 00
Mare, Black Maria	A. H. Knight	Table Bluff	\$12 00
Mare, Queen of Spades	A. H. Knight	Table Bluff	\$9 00
Mare, chestnut filly	A. H. Knight	Table Bluff	\$9 00
HORSES OF ALL WORK.			
Stallion, Farmer Boy	John Evarts	Petrolia	\$18 00
Stallion, Lafayette, Jr.	Curt. Lewis	Ferndale	\$12 00
Stallion, Nimrod	A. Forbes	Eureka	\$12 00
Mare, Kate	G. Patrick	Ferndale	\$12 00
Mare, Mother Hubbard	R. J. Bugbee	Ferndale	\$6 00
Mare, May	G. Patrick	Ferndale	\$9 00
Gelding, Dick	G. Patrick	Ferndale	\$9 00
Mare, Kate	P. M. Johnson	Rohnerville	\$5 00
Gelding, Farmer	Neil Friel	Ferndale	\$9 00
Mare, May Queen	A. Forbes	Eureka	\$4 00
Colt, Champak	G. Patrick	Ferndale	\$6 00
Colt, Pacific Boy	J. R. Bugbee	Ferndale	\$3 00
DRAFT HORSES.			
Stallion, Providence	W. H. E. Smith	Rohnerville	\$18 00
Stallion, Val Jean	W. H. E. Smith	Rohnerville	\$12 00
Stallion, two years old, Billy ..	John Winslow	Eureka	\$12 00
Stallion, two years old, Norman ..	P. Kelley	Ferndale	\$6 00
Brood mare, Lucy	John Winslow	Eureka	\$12 00
Brood mare, Lady Gray	J. L. Douglass	Rohnerville	\$6 00
Mare, three years old, Nellie ..	N. Hurlburt	Ferndale	\$9 00
Gelding, three years old, Rowdy ..	John McDonough	Ferndale	\$5 00
Mare, two years old, Doll	J. Lawson	Ferndale	\$9 00
Mare, one year old, Nellie	P. Kelley	Ferndale	\$9 00
Mare, one year old, Laura	J. L. Douglass	Rohnerville	\$4 00
Colt, Dinah	J. L. Douglass	Rohnerville	\$6 00
Colt, Billie	J. M. Hess	Hydesville	\$3 00
ROADSTERS.			
Stallion, Patchin	T. J. Knight	Table Bluff	\$18 00
Stallion, Go Bang	T. D. Felt	Rohnerville	\$12 00
Stallion, three years old, Ira	H. W. Cooper	Eureka	\$12 00
Stallion, two years old, Prince Hayward ..	P. H. Quinn	Eureka	\$12 00
Stallion, two years old, Johnnie ..	J. F. Quill	Table Bluff	\$6 00
Brood mare, Lady Felt	R. J. Bugbee	Ferndale	\$12 00
Brood mare, Fillie	A. D. Smith	Rohnerville	\$6 00
Gelding, three years old, Victor ..	J. L. Eby	Rohnerville	\$9 00
Mare, two years old, Maud M	W. Murphy	Slide	\$9 00
Mare, two years old, Junebug	P. H. Quinn	Eureka	\$5 00
Gelding, one year old, Johnnie Moor ..	S. M. Douglass	Rohnerville	\$9 00
Mare, one year old, Poscorina	J. L. Eby	Rohnerville	\$4 00
Colt, Topsy	O. Mills	Eureka	\$6 00
SADDLE HORSES.			
Cora	C. L. Thompson	Camp Grant	\$6 00
.....	A. H. Johnson	Rohnerville	\$3 00
MULES.			
Pete and Sam	W. S. Robinson	Bridgeville	\$12 00
Bert and Queen	B. Robinson	Ferndale	\$6 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CATTLE.			
Durham bull, Alex.	J. A. Davenport	Ferndale	\$18 00
Durham bull, one year old, Johnnie.	W. Samuels.	Ferndale	\$9 00
Durham bull calf, Second Duke of Mad River	S. S. Loreson	Arcata	\$6 00
Durham bull calf, Redwood	Alex. Forbes	Eureka	\$3 00
Durham cow, Lady	D. M. Bryant	Ferndale	\$12 00
Durham cow, one year old, Donine.	D. M. Bryant	Ferndale	\$9 00
Jersey bull, three years old, Jack.	J. Fitzell	Hydesville	\$18 00
Ayrshire bull, three years old, Scotland.	N. Hurlburt	Ferndale	\$18 00
Ayrshire bull, three years old, Victor.	N. Hurlburt	Ferndale	\$9 00
Ayrshire bull, one year old, Roy	N. Hurlburt	Ferndale	\$9 00
Ayrshire bull calf, Ranger.	N. Hurlburt	Ferndale	\$6 00
Ayrshire cow, three years old, Maud	N. Hurlburt	Ferndale	\$12 00
Ayrshire cow, Cora	N. Hurlburt	Ferndale	\$6 00
Ayrshire cow, two years old, Silva	N. Hurlburt	Ferndale	\$12 00
Ayrshire cow, Zip	N. Hurlburt	Ferndale	\$6 00
Holstein bull, Bismarck	S. F. Pine	Eureka	\$18 00
Holstein bull, two years old, Bismarck	J. G. Graham	Eureka	\$12 00
Holstein bull, one year old, Dermott	Alex. Forbes	Eureka	\$9 00
Holstein bull, one year old, Dick	S. F. Pine	Eureka	\$5 00
Holstein bull calf, Elko	Alex. Forbes	Eureka	\$6 00
Holstein bull calf, Elkwood	Alex. Forbes	Eureka	\$3 00
Holstein cow, three years old, Portia Lincoln	Alex. Forbes	Eureka	\$12 00
Holstein cow, three years old, Katie.	S. F. Pine	Eureka	\$6 00
Holstein heifer calf, Lucy	S. F. Pine	Eureka	\$6 00
Holstein heifer calf, Rosabell Stratmore.	Alex. Forbes	Eureka	\$3 00
Hereford bull, Prince Leopold.	Ira Russ	Ferndale	\$18 00
GRADED CATTLE.			
Bull, two years old, Billie.	C. Decarlie	Ferndale	\$9 00
Bull, two years old, Brigham	W. Samuels	Ferndale	\$4 00
Bull, one year old, Challenge	Ira A. Russ	Ferndale	\$6 00
Bull calf, Daniel Webster, Jr.	W. Jacobson	Phillipsville	\$4 00
Bull calf	John Graham	Eureka	\$2 00
Cow, three years old, Fannie	D. M. Bryant	Ferndale	\$6 00
Cow, three years old, Princess	D. M. Bryant	Ferndale	\$3 00
Cow, two years old, Betsy	D. M. Bryant	Ferndale	\$6 00
Cow, two years old, Jane	Joe Reynolds	Rohnerville	\$3 00
Cow, one year old, Beauty	H. A. Myrick	Rohnerville	\$4 00
Cow, one year old, Mabel	Alex. Forbes	Eureka	\$2 00
SHEEP.			
Cotswold ram, Prince	T. J. Knight	Table Bluff	\$12 00
Cotswold ram	T. J. Knight	Table Bluff	\$6 00
Merino ram	T. J. Knight	Table Bluff	\$12 00
Five ewes	T. J. Knight	Table Bluff	\$12 00
Five ewes, Merino	T. J. Knight	Table Bluff	\$12 00
Shropshire ram	W. Samuels	Ferndale	\$12 00
GRADED SHEEP.			
Ram	W. Samuels	Ferndale	\$9 00
Five ewes	T. J. Knight	Table Bluff	\$6 00
SWINE.			
Berkshire sow	A. H. Knight	Table Bluff	\$6 00
Berkshire sow	A. H. Knight	Table Bluff	\$3 00
Essex boar	A. H. Knight	Table Bluff	\$6 00
Poland-China boar, Jack	W. Samuels	Ferndale	\$6 00
Poland-China sow, Daisy	W. Samuels	Ferndale	\$6 00
POULTRY.			
Lot of poultry	Matt. Robinson	Ferndale	\$6 00
Pair of geese	Mrs. Nancy Hauck	Rohnerville	\$2 00
Pair of geese	J. P. Godfrey	Hydesville	\$1 00
Pair of turkeys	John Palmer	Hydesville	\$2 00
Pair of turkeys	J. P. Godfrey	Hydesville	\$1 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—MECHANICAL PRODUCTS.			
Open buggy	A. E. Chope	Eureka	\$10 00
Harrows	O. Hamill	Rohnerville	\$5 00
Best shod horse for light road work	John H. Brown	Slide	\$5 00
Best shod horse for heavy draft	John H. Brown	Slide	\$5 00
Single carriage harness	E. Kausen	Ferndale	\$5 00
Best display of leather	Hungren, Sanguist & Co.	Rohnerville	\$6 00
Pair calf boots	J. Reynolds	Rohnerville	\$3 00
Cooperage	L. M. Smith	Ferndale	\$3 00
Brick	J. Thompson	Rohnerville	\$5 00
Sidehill plow (special)	Hope & Senterly	Blocksburg	\$10 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—AGRICULTURAL PRODUCTS.			
Best five pounds of butter	N. Hurlburt	Ferndale	\$2 00
Second best five pounds of butter	Niel Friel	Ferndale	\$1 00
Best five pounds of butter, three months old	N. Hurlburt	Ferndale	\$5 00
Second best five pounds of butter, three months old	W. H. Wilson	Ferndale	\$2 50
Best cheese	Chas. Vedder	Ferndale	\$5 00
Second best cheese	Chas. Vedder	Ferndale	\$2 50
Best bushel of wheat	J. P. Godfrey	Hydesville	\$4 00
Second best bushel of wheat	H. Drake	Rohnerville	\$2 50
Best bushel of barley	Geo. Stewart	Rohnerville	\$4 00
Second best bushel of barley	J. H. Hodge	Rohnerville	\$2 50
Best bushel of oats	H. Drake	Rohnerville	\$4 00
Second best bushel of oats	J. S. East	Rohnerville	\$2 50
Best bushel of sweet peas	B. Lambert	Rohnerville	\$4 00
Second best bushel of sweet peas	B. A. Price	Rohnerville	\$2 50
Best bushel of blackeye peas	J. H. Hodge	Rohnerville	\$4 00
Best bushel of Niles peas	J. Lawson	Ferndale	\$4 00
Second best bushel of Niles peas	B. A. Price	Rohnerville	\$2 50
Best bushel of beans	J. E. Roberts	Ferndale	\$4 00
Second best bushel of beans	Alex. Forbes	Eureka	\$2 50
Best two sheaves of oats	J. S. East	Rohnerville	\$2 00
Second best two sheaves of oats	J. S. East	Rohnerville	\$1 00
Best two sheaves of wheat	J. S. East	Rohnerville	\$2 00
Best two sheaves of barley	E. J. Baker	Eureka	\$2 00
Best six stalks of corn	J. J. Newman	Camp Grant	\$2 00
Second best six stalks of corn	G. M. Howard	Camp Grant	\$1 00
Best half dozen beets	J. Reynolds	Hydesville	\$2 00
Second best half dozen beets	J. S. East	Rohnerville	\$1 00
Best half dozen stalk beets	Geo. Stewart	Rohnerville	\$2 00
Second best half dozen stalk beets	J. S. East	Rohnerville	\$1 00
Best half dozen table carrots	Geo. Stewart	Rohnerville	\$2 00
Second best half dozen table carrots	John Dobbyn	Rohnerville	\$1 00
Best half dozen stalk carrots	John Dobbyn	Rohnerville	\$2 00
Second best half dozen stalk carrots	W. Samuels	Ferndale	\$1 00
Best three cabbages	Geo. E. Stewart	Rohnerville	\$2 00
Second best three cabbages	B. L. Waite	Rohnerville	\$1 00
Best three squashes	A. Hansell & Son	Camp Grant	\$2 00
Second best three squashes	J. S. East	Rohnerville	\$1 00
Best three pumpkins	Geo. Stewart	Rohnerville	\$2 00
Best three watermelons	A. Hansell & Son	Camp Grant	\$2 00

TRANSACTIONS OF THE
THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best cucumbers	J. Reynolds.	Hydesville.	\$2 00
Second best cucumbers	A. Hansell & Son.	Camp Grant.	\$1 00
Best tomatoes	A. Hansell & Son.	Camp Grant.	\$2 00
Second best tomatoes	J. T. McMahon.	Blocksburg.	\$1 00
One bushel of potatoes	B. L. Waite.	Rohnerville.	\$5 00
Second bushel of potatoes	J. E. Roberts.	Ferndale.	\$2 50
Best potatoes	J. S. East.	Rohnerville.	\$3 00
Second best potatoes	John Dobbyn.	Rohnerville.	\$2 00
Best sweet potatoes	A. Hansell & Son.	Camp Grant.	\$2 00
Best onions	C. Langdon.	Rohnerville.	\$2 00
Second best onions	B. L. Waite.	Rohnerville.	\$1 00
Best hams	J. Dahle.	Rohnerville.	\$4 00
Best bacon	J. Dahle.	Rohnerville.	\$4 00
Best lard	J. Dahle.	Rohnerville.	\$4 00
Best display of fruits	A. Hansell & Son.	Camp Grant.	\$15 00
Second best display of fruits	J. J. Newman.	Camp Grant.	\$7 50
Best five varieties of apples	A. Hansell & Son.	Camp Grant.	\$10 00
Second best five varieties of apples	J. J. Newman.	Camp Grant.	\$5 00
Best display of pears	A. Hansell & Son.	Camp Grant.	\$2 00
Best display of grapes	G. M. Howard.	Camp Grant.	\$2 00
Best display of prunes	H. Davis.	Hydesville.	\$2 00
Best display of plums	H. Davis.	Hydesville.	\$2 00
Best display of peaches	A. Hansell & Son.	Camp Grant.	\$5 00
Best two bottles blackberry wine	Mrs. I. Price.	Ferndale.	\$2 00
Best two bottles currant wine	Mrs. I. Price.	Ferndale.	\$2 00
CLASS II—JAMS, JELLIES, AND PRESERVES.			
Best plum jam	Mrs. T. J. Manon.	Rohnerville.	\$2 00
Best currant jam	Mrs. G. Patrick.	Ferndale.	\$2 00
Best raspberry jam	Miss E. McMeeken.	Arcata.	\$2 00
Best blackberry jam	Mrs. B. H. McNeil.	Rohnerville.	\$2 00
Best currant jelly	Mrs. H. E. Noe.	Ferndale.	\$2 00
Best apple jelly	Mrs. A. G. Robinson.	Slide.	\$2 00
Best raspberry jelly	Miss M. Woolridge.	Ferndale.	\$2 00
Best crabapple jelly	Mrs. R. A. Lutman.	Hydesville.	\$2 00
Best blackberry jelly	Miss A. W. Barber.	Ferndale.	\$2 00
Best peach jelly	Miss V. Hyatt.	Hydesville.	\$2 00
Best quince jelly	Mrs. J. L. Douglass.	Rohnerville.	\$2 00
Best watermelon preserves	Mrs. A. Forbes.	Eureka.	\$2 00
Best tomato preserves	Mrs. A. Forbes.	Eureka.	\$2 00
Best currant preserves	Mrs. E. McMeeken.	Arcata.	\$2 00
Best pear preserves	Mrs. T. J. Manon.	Rohnerville.	\$2 00
Best blackberry preserves	Mrs. I. Price.	Ferndale.	\$2 00
Best quince preserves	Mrs. M. Barber.	Ferndale.	\$2 00
Best apple preserves	Mrs. J. L. Douglass.	Rohnerville.	\$2 00
Best peach preserves	Mrs. T. J. Manon.	Rohnerville.	\$2 00
Best apple butter	Mrs. H. E. Noe.	Ferndale.	\$2 00
Best plum butter	Miss A. Barber.	Ferndale.	\$2 00
Best tomato butter	Mrs. Giles Patrick.	Ferndale.	\$2 00
Best peach butter	Mrs. T. J. Manon.	Rohnerville.	\$2 00
Best display of apple butter, preserves, jams, and jellies	Mrs. G. Patrick.	Ferndale.	\$5 00
Best canned fruits	Mrs. R. A. Lutman.	Hydesville.	\$8 00
Second best canned fruits	Miss Anna Barber.	Ferndale.	\$4 00
Best dried apples	G. C. Barber.	Ferndale.	\$2 00
Best dried plums	G. C. Barber.	Ferndale.	\$2 00
Best dried prunes	A. Hansell & Son.	Camp Grant.	\$2 00
Best dried pears	G. C. Barber.	Ferndale.	\$2 00
Best dried peaches	Henry Davis.	Hydesville.	\$2 00
Best dried corn	Henry Davis.	Hydesville.	\$2 00
Best display of dried fruits	G. C. Barber.	Ferndale.	\$5 00
Second best display of dried fruits	Henry Davis.	Hydesville.	\$2 50
CLASS III—BREAD AND PASTRY.			
Best two loaves of corn bread	Mrs. M. E. Schutter.	Rohnerville.	\$2 00
Best two loaves of rye bread	Mrs. A. N. Brown.	Eureka.	\$2 00
Second best two loaves of rye bread	Mrs. Henry Lane.	Slide.	\$1 00
Best two loaves of wheat bread	Mrs. Neil Friel.	Ferndale.	\$2 00
Second best two loaves of wheat bread	Mrs. Henry Lane.	Slide.	\$1 00
Best pan of biscuits	Mrs. B. H. McNeil.	Rohnerville.	\$2 00

THIRD DEPARTMENT Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best pastry.....	Mrs. Henry Lane..	Slide.....	\$5 00
Second best pastry.....	Miss M. Woolridge	Ferndale	\$2 50
FLOWERS.			
Best display of flowers, not less than ten varieties.....	Miss M. Woolridge	Ferndale	\$10 00
Second best display of flowers, etc.....	Miss M. Woolridge	Ferndale	\$5 00
Third best display of flowers, etc.....	Miss M. Woolridge	Ferndale	\$3 00
Fourth best display of flowers, etc.....	Mrs. M. N. Brown..	Eureka	\$2 00
Best bouquet.....	Mrs. Wm. Brown..	Eureka	\$3 00
Second best bouquet.....	Miss M. Woolridge	Ferndale	\$2 00
Third best bouquet.....	Mrs. Wm. Brown..	Eureka	\$1 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best rag carpet.....	Mrs. W. Underwood	Slide.....	\$5 00
Second best rag carpet.....	Mrs. G. Patrick..	Ferndale	\$2 50
Best rug, braided.....	Mrs. A. Rohner..	Slide.....	\$3 00
Second best rug, braided.....	Mrs. T. J. Little..	Rohnerville..	\$1 50
Best worsted rug.....	Mrs. M. T. Blackburn	Eureka	\$3 00
Second best worsted rug.....	Miss L. Stewart..	Rohnerville..	\$1 50
Best slipper case.....	Miss Jessie Ellery	Eureka	\$2 00
Second best slipper case.....	Mrs. B. F. Farnham	Eureka	\$1 00
Best pillow sham.....	Mrs. M. Bugbee..	Ferndale	\$4 00
Second best pillow sham.....	Miss Etta Derr..	Rohnerville..	\$2 00
Best darned net pillow sham.....	Miss M. A. McMahon	Blocksburg	\$4 00
Second best darned net pillow sham.....	Miss M. Graham..	Eureka	\$2 00
Best sewing machine work.....	Mrs. View.....	Rohnerville..	\$3 00
Second best sewing machine work.....	Mrs. B. F. Farnham	Eureka	\$1 50
Best hand sewing.....	Mrs. Gier.....	Ferndale	\$3 00
Second best hand sewing.....	Mrs. Gier.....	Ferndale	\$1 50
Best sofa pillow.....	Mrs. Jno. M. Vance	Eureka	\$2 00
Second best sofa pillow.....	Mrs. E. J. Ruddock	Eureka	\$1 00
Best child's dress.....	Mrs. W. T. Bonstell	Eureka	\$2 00
Second best child's dress.....	Miss Jessie Ellery	Eureka	\$1 00
Best bedspread other than knit or crochet.....	Mrs. H. Kelley..	Ferndale	\$2 00
Best specimen of quilting.....	Mrs. Ira Brazee..	Slide.....	\$3 00
Second best specimen of quilting.....	Mrs. H. D. Bendixen	Eureka	\$1 50
Best crazy quilt.....	Mrs. S. M. Buck..	Eureka	\$5 00
Second best crazy quilt.....	Mrs. Jno. M. Vance	Eureka	\$2 50
Best patchwork quilt work.....	Mrs. N. O. Davidson	Eureka	\$4 00
Second best patchwork quilt work.....	Mrs. Ira Brazee..	Slide.....	\$2 00
Best patchwork, worsted.....	Mrs. E. B. Wolverton	Ferndale	\$4 00
Second best patchwork, worsted.....	Mrs. Martha Felt..	Rohnerville..	\$2 00
Best bedspread, crochet.....	Mrs. Geo. Graham	Eureka	\$5 00
Best knit skirt.....	Mrs. M. Brown..	Eureka	\$4 00
Best crochet skirt.....	Miss F. Felt.....	Rohnerville..	\$4 00
Second best crochet skirt.....	Miss A. Martin..	Eureka	\$2 00
Best worsted tidy.....	Miss E. Jackson..	Eureka	\$3 00
Second best worsted tidy.....	Mrs. N. N. Brown	Eureka	\$1 50
Best canvas tidy.....	Miss Jessie Ellery	Eureka	\$3 00

TRANSACTIONS OF THE
FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Second best canvas tidy	Miss M. Dudley ..	Petrolia	\$1 50
Best cotton crochet tidy	Miss H. Rohner ..	Slide	\$3 00
Second best crochet tidy	Mrs. Ira Brazee ..	Slide	\$1 50
Best knit tidy	Miss A. Anderson ..	Hydesville	\$3 00
Second best knit tidy	Mrs. B. Robinson ..	Ferndale	\$1 50
Best darned net tidy	Miss M. M. Francis ..	Ferndale	\$3 00
Second best darned net tidy	Mrs. W. T. Smith ..	Ferndale	\$1 50
Best toilet set, crochet	Miss Emma Mills ..	Rio Del	\$2 00
Second best toilet set, crochet	Mrs. Woolridge ..	Ferndale	\$1 50
Best toilet cushion	Mrs. W. T. Bonstell ..	Eureka	\$1 00
Second best toilet cushion	Miss J. Ellery ..	Eureka	\$0 50
Best lamp mat	Miss Friedenbach ..	Slide	\$1 00
Second best lamp mat	Miss E. Jackson ..	Eureka	\$0 50
Best toilet set on canvas	Mrs. N. N. Brown ..	Eureka	\$1 00
Best sample of tatting	Mrs. Ira Brazee ..	Slide	\$1 00
Second best sample of tatting	Mrs. L. M. Smith ..	Ferndale	\$0 50
Best specimen of outline embroidery	Mrs. N. N. Brown ..	Eureka	\$2 00
Second best specimen outline embroidery	Mrs. B. F. Farnham ..	Eureka	\$1 00
Best specimen of ribbon embroidery	Mrs. N. N. Brown ..	Eureka	\$2 00
Second best specimen ribbon embroidery	Mrs. Jno. M. Vance ..	Eureka	\$1 00
Best specimen of chenille embroidery	Mrs. E. J. Ruddock ..	Eureka	\$2 00
Second best specimen chenille embroidery	Mrs. W. T. Bonstell ..	Eureka	\$1 00
Best specimen of silk embroidery	Mrs. W. T. Bonstell ..	Eureka	\$1 00
Second best specimen of silk embroidery	Mrs. E. Galloway ..	Eureka	\$0 50
Best worsted embroidery	Mrs. E. Galloway ..	Eureka	\$1 00
Best cotton embroidery	Mrs. E. Galloway ..	Eureka	\$1 00
Second best cotton embroidery	Mrs. E. Galloway ..	Eureka	\$0 50
Best specimen of braiding	Mrs. H. Kelley ..	Ferndale	\$1 00
Best knit lace	Mrs. I. Price ..	Ferndale	\$2 00
Second best knit lace	Miss E. Jackson ..	Eureka	\$1 00
Best specimen of point lace	Mrs. E. J. Ruddock ..	Eureka	\$5 00
Second best specimen of point lace	Mrs. E. J. Ruddock ..	Eureka	\$2 50
Best specimen of kensington work	Mrs. W. T. Bonstell ..	Eureka	\$5 00
Second best specimen of kensington work	Mrs. N. N. Brown ..	Eureka	\$2 50
Best applique work	Mrs. H. D. Bendixen ..	Eureka	\$4 00
Best macrame work	Miss M. M. Francis ..	Ferndale	\$2 00
Second best macrame work	Mrs. O. Mills ..	Eureka	\$1 00
Best bead work	Mrs. Woolridge ..	Ferndale	\$2 00
Best lambrequin bead work	M. H. Friedenthal ..	Eureka	\$2 00
Second best lambrequin bead work	Miss J. Ellery ..	Eureka	\$1 00
Lamp screen	Miss J. Ellery ..	Eureka	\$2 00
Best splasher	Mrs. N. N. Brown ..	Eureka	\$2 00
Second best splasher	Miss A. Barber ..	Ferndale	\$1 00
Best specimen of rick-rack	Mrs. L. W. Smith ..	Ferndale	\$2 00
Second best specimen of rick-rack	Miss E. Jackson ..	Eureka	\$1 00
Best feather wreath	Miss L. Freidenbach ..	Slide	\$2 00
Best worsted wreath	Mrs. F. Brown ..	Eureka	\$2 00
Second best worsted wreath	Mrs. J. H. Brown ..	Eureka	\$1 00
Best specimen of hair work	Mrs. A. Jackson ..	Rohnerville ..	\$2 00
Best display of fancy articles	Mrs. S. M. Buck ..	Eureka	\$10 00
Best oil painting (marine)	Miss M. Taylor ..	Eureka	\$5 00
Second best oil painting	Mrs. W. T. Bonstell ..	Eureka	\$2 50
Best oil painting (flowers)	Mrs. A. J. Smith ..	Eureka	\$5 00
Second best oil painting (flowers)	Mrs. Parkman ..	Rohnerville ..	\$2 50
Best kensington painting	Mrs. B. F. Farman ..	Eureka	\$5 00
Second best kensington painting	Mrs. N. N. Brown ..	Eureka	\$2 50
Best painting on china	Miss M. Taylor ..	Eureka	\$5 00
Second best painting on china	Mrs. Parkman ..	Rohnerville ..	\$2 50
Best water color flower	Mrs. Kendall ..	Eureka	\$5 00
Best water color portrait	Mrs. Parkman ..	Rohnerville ..	\$5 00
Best crayon drawing	Miss B. Sterret ..	Rohnerville ..	\$5 00
Best landscape	Miss A. J. Smith ..	Eureka	\$5 00
Second best landscape	Miss I. M. Crawford ..	Ferndale	\$2 50
Best pencil drawing	F. W. Cady ..	Garberville ..	\$5 00
Second best	Mrs. Kendall ..	Eureka	\$2 50

FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best penmanship.....	C. C. Scott	Eureka	\$4 00
Best display of canaries.....	Miss E. Frost.....	Eureka	\$5 00
Second best display of canaries	Mrs. M. T. Baker	Eureka	\$2 50

JUVENILE DEPARTMENT.

EXHIBITED BY MISSES UNDER FOURTEEN YEARS OF AGE.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best patchwork and knit lace	Alta Teddar	Ferndale	\$1 00
Second best	Grace Lawson	Ferndale	\$0 50
Best patched garment.....	Etta Bryant	Rohnerville	\$1 00
Best hand sewing	Grace Lawson	Ferndale	\$1 00
Best crochet work.....	Lillian Strong	Eureka	\$1 00
Best toilet set	Musa Woolridge..	Ferndale	\$1 00
BY GIRL OR BOY UNDER FOURTEEN YEARS OF AGE.			
Best map drawing	Nelson Cook	Slide	\$2 00
Second best	Walter Rudolph ..	Slide	\$1 00
Best specimen of penmanship	Jno. A. Lane	Slide	\$4 00
Second best	Johnnie Field	Eureka	\$2 00

SPEED PROGRAMME.

TUESDAY, SEPTEMBER 27, 1887.

RACE No. 1—RUNNING.

Purse of thirty dollars. Free for all saddle horses having no record under fifty-eight seconds. Catch weights. Half mile and repeat. Horses entered for other than saddle race barred. First purse, twenty dollars; second, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Vengeance	E. J. Weldron	Eureka
Amanda	J. Gushaw	Slide.
Cora	C. L. Thompson	Camp Grant.
Snip	J. D. Waltham	Covelo.
Rio Dell Roan	John Pedrotte	Rio Dell.
Lodi	P. O'Leary .....	.....
Kitty Cade	H. L. Knight	Table Bluff.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Amanda	Vengeance
2. Rio Dell Roan	Snip
3. Vengeance	Kitty Cade
4. Kitty Cade	Cora
5. Cora	Rio Del Roan
6. Snip	Amanda

Time—0:53 $\frac{3}{4}$; 0:54 $\frac{1}{4}$.

RACE No. 2—TROTTING.

Humboldt Stake. For colts of 1886, bred in the district; seventy-five dollars added; twenty dollars entrance; one half of which being deposited, the remaining ten dollars to be paid at the time of making entries for the other races. W. H. E. Smith agrees to add fifty dollars. The whole sum to be divided as follows: sixty, thirty, and ten per cent. One mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lee Moor	M. Perrott	Rohnerville.
Pascorina	J. L. Eby	Rohnerville.
Johnnie Moor	S. M. Douglass	Rohnerville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Pascorina	Johnnie Moor
2. Johnnie Moor	Pascorina
3. Lee Moor	Lee Moor

Time—3:44.

WEDNESDAY, SEPTEMBER 28, 1887.

RACE No. 3—TROTTING.

Purse of one hundred and fifty dollars. Three minute class. Mile heats, two in three. (Patchen barred); first, one hundred dollars; second, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maud C	H. C. Haas	Rohnerville.
Bert Holmes	Robert Holmes	Eureka.
Pete Steinway	N. Groton	Rohnerville.

Position at Starting.	Position at Close.
1. Pete Steinway	Maud C. 1 1
2. Bert Holmes	Bert Holmes .. 2 2
3. Maud C	Pete Steinway .. 3 0

Time—2:46; 2:42½.

Patchen entered to try right of bar. Directors decided against him. He did not start.

RACE No. 4—TROTTING.

Purse, one hundred and twenty-five dollars. For two-year olds. Eighty-five dollars to first; forty dollars to second. Mile heats, two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Johnnie Quill	H. C. Haas	Rohnerville.
Billie the Kid	M. Perrott	Rohnerville.
Silver Shield	A. A. Frank	Rohnerville.
Junebug	P. H. Quinn	Eureka.

Position at Starting.	Position at Close.
1. Junebug	Silver Shield .. 1 1
2. Silver Shield	Billie the Kid .. 2 dis.
3. Billy the Kid	Junebug

Time—2:56; 3:03¾.

Johnnie Quill withdrawn on account of lameness.

RACE No. 5—RUNNING.

Purse, one hundred and fifty dollars. Free for all. Three fourths of a mile and repeat. First horse, one hundred dollars; second, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady Leister	J. D. Waltham	Covelo.
Ace Full	W. Dorrell	Covelo.
Stoneman	T. J. Knight	Table Bluff.

Position at Starting.	Position at Close.
1. Lady Leister (stifled in scoring and withdrawn)	Stoneman
2. Stoneman	Ace Full
3. Ace Full	

Time—1:19¾; 1:28.

THURSDAY, SEPTEMBER 29, 1887.

RACE No. 6—TROTTING.

2:15 Class. Purse, one hundred and seventy-five dollars. Mile heats; two in three. First horse, one hundred and twenty dollars; second, fifty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rapid Ann	H. C. Haas	Rohnerville.
Patchen	T. J. Knight	Table Bluff.
Bert Holmes	Robert Holmes	Eureka.
Position at Starting.	Position at Close.	
1. Rapid Ann	Patchen	2 1 1
2. Patchen	Rapid Ann	1 2 2
3. Bert Holmes (withdrawn)		
Time—2:30; 2:28½; 2:31.		

SPECIAL RUNNING RACE.

Purse, seventy dollars. Added money. Quarter mile dash. Entrance fee, ten dollars. (Three entering, making the purse one hundred dollars.)

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Johnnie D.	B. F. Sears	Rio Dell.
Johnnie Moore	W. Dorrell	Covelo.
Bird	F. Asbill	Covelo.
Position at Starting.	Position at Close.	
1. Bird	Johnnie D.	1
2. Johnnie Moore	Bird	2
3. Johnnie D.	Johnnie Moore	3
Time—0:24¾.		

RACE No. 7—TROTTING.

Purse, one hundred and twenty-five dollars. For three-year olds. Mile heats; two in three. First horse, eighty-five dollars; second, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Prince Hayward	P. H. Quinn	Eureka.
Ira	H. W. Cooper	Arcata.
Victor	J. L. Eby	Rohnerville.

Prince Hayward was reported lame and unable to trot. Ira appeared on time, and trotted his mile. The Judges awarded him his entrance fee and one half the entrance of the other two horses—by permission of Directors made an exhibition trot of one mile in 2:43½. Time of first heat, 3:03.

RACE No. 8—RUNNING.

Purse, one hundred and fifty dollars. Free for all. One hundred dollars to first; fifty dollars to second. Half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ace Full	W. Dorrell	Covelo.
Stoneman	T. J. Knight	Table Bluff.
Lady Leister	John Waltham	Covelo.

Position at Starting.	Position at Close.
1. Stoneman	Stoneman
2. Ace Full	Ace Full
3. Lady Leister (withdrawn)	

Time—0:51½; 0:53½.

FRIDAY, SEPTEMBER 30, 1887.

RACE No. 9—RUNNING.

Purse, one hundred and fifty dollars. Free for all. One hundred dollars to first; fifty dollars to second. One and one quarter mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Frank Rhoades	John Waltham	Covelo.
Queen of Spades	A. H. Knight	Table Bluff.
Ace Full	W. Dorrell	Covelo.

Position at Starting.	Position at Close.
1. Queen of Spades	Queen of Spades
2. Frank Rhoades	Frank Rhoades
3. Ace Full (withdrawn)	

Time—2:30.

RACE No. 10—TROTTING.

Purse, three hundred dollars. Free for all. Two hundred dollars to first; one hundred dollars to second. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Patchen	T. D. Knight	Table Bluff.
Billie	W. B. Alford	Ferndale.
Rapid Ann	Henry Haas	Rohnerville.

Position at Starting.	Position at Close.
1. Billie	Upon scoring the Judges observed that Billie was not a trotter, but a pacer, and declared him not eligible to go in this race, and pronounced the race off, according Patchen his entrance fee and one half the entrance fee of the other two horses.
2. Patchen	
3. Rapid Ann (withdrawn)	

RACE No. 11—RUNNING.

Purse, one hundred dollars; seventy dollars to first; thirty dollars to second. One half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Stoneman	T. J. Knight	Table Bluff.
Salt Water Jim	B. F. Sears	Rio Dell.
Queen of Spades	A. H. Knight	Table Bluff.

Position at Starting.	Position at Close.
1. Salt Water Jim	Salt Water Jim 1 1
2. Stoneman	Stoneman
3. Queen of Spades (withdrawn)	2 2

Time—0:51; 0:51³/₄.

TRANSACTIONS

OF THE

TENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Siskiyou, Shasta, and Trinity.

OFFICERS OF THE ASSOCIATION.

WM. McCONNELL.....	President.
CLARENCE S. SMITH	Secretary.
MAURICE RENNER.....	Treasurer.

DIRECTORS.

WM. McCONNELL	Yreka, Siskiyou County.
JOHN T. MOXLEY	Yreka, Siskiyou County.
S. MAGOFFEY	Yreka, Siskiyou County.
L. SWAN.....	Yreka, Siskiyou County.
D. N. LASH	Yreka, Siskiyou County.
JAMES VANCE	Yreka, Siskiyou County.
E. A. REID	Redding, Shasta County.
F. ZARLE.....	Trinity Center, Trinity County.

REPORT.

YREKA, December 1, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Tenth (Mount Shasta) District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

CLARENCE S. SMITH, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Nomination fees to races	\$200 00	
Entry fees to races	380 00	
Entry fees for premiums	71 00	
Sale of membership badges	410 00	
Sale of pavilion badges	30 00	
Door receipts at pavilion	51 00	
Gate receipts at track	394 00	
Bar receipts	504 00	
Pool receipts	162 50	
Ball receipts	263 50	
Licenses and privileges	74 00	
Sundry resources	89 00	
Subscriptions	297 50	
State appropriation	1,000 00	
		<u>\$3,926 50</u>

Expenditures.

Purses	\$1,525 00	
Premiums	544 00	
Printing	135 00	
Permanent improvements	225 00	
Entry fees returned	10 50	
Sundry bills to the amount of	910 14	
Secretary's salary	75 00	
		<u>\$3,424 64</u>
Total receipts		\$3,926 50
Total expenditures		<u>3,424 64</u>
Balance on hand		\$501 86

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS III—HORSES OF ALL WORK.		
Black stallion, three years old, Bull of the Woods.....	Wm. Miller.....	Mt. Shasta.
Black mare, six years old, Susie.....	Wm. White.....	Mt. Shasta.
CLASS IV—DRAFT HORSES.		
Black stallion, aged, Duke of Normandy.....	Millard F. Barnum.....	Etna Mills.
Bay stallion, aged, King.....	Antone Egli.....	Fort Jones.
CLASS V—ROADSTERS.		
Black stallion, aged, Curtis.....	J. T. Jones.....	Mt. Shasta.
Bay stallion, three years old, Admar.....	S. D. Prather.....	Montague.
Bay mare, aged, Lady Beech.....	Wm. McConnell.....	Yreka.
Brown mare, three years old, Susie H.....	L. Swan.....	Yreka.
Double team, mares, Altona and Aggie.....	L. Swan.....	Yreka.
Double team, mares, Larena and Bastanta.....	S. D. Prather.....	Montague.
CLASS VI—STANDARD TROTTERS.		
Bay mare, aged, Wanda.....	Wm. McConnell.....	Yreka.
CLASS VIII—COLTS.		
Black stallion, one year old, Argonaut.....	R. E. Rader.....	Mayten.
Bay mare, two years old, Maud.....	R. E. Rader.....	Mayten.
JACKS AND MULES.		
Pair black mules, Jule and Beck.....	S. D. Prather.....	Montague.
CLASS I—CATTLE—THOROUGHBREDS.		
Black bull, Aberdeen Angus, two years old, Charger.....	S. D. Prather.....	Montague.
Brown bull, Jersey, aged, John Roney.....	Ed. McNulty.....	Yreka.
Fawn cow, Jersey, three years old, Daisy.....	George Flock.....	Yreka.
CLASS II—SWEEPSTAKES.		
Black bull, Aberdeen Angus, Charger.....	S. D. Prather.....	Montague.
Brown bull, Jersey, John Roney.....	Ed. McNulty.....	Yreka.
Fawn cow or heifer, seventeen months old, Birdie.....	F. Riley.....	Yreka.
Fawn cow, three years old, Bertha.....	Ed. McNulty.....	Yreka.
Fawn suckling calf, Bossy.....	Ed. McNulty.....	Yreka.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS III—HORSES OF ALL WORK.			
Best stallion, three years old, Bull of the Woods	Wm. Miller	Mt. Shasta.....	\$20 00
Best mare, Susie	Wm. White.....	Mt. Shasta.....	\$15 00
CLASS IV—DRAFT HORSES.			
Best draft stallion, King.....	Antone Egli	Fort Jones.....	\$20 00
CLASS V—ROADSTERS.			
Best roadster stallion, Admar	S. D. Prather	Montague.....	\$30 00
Best roadster mare, Susie H	L. Swan	Yreka	\$20 00
CLASS VI—STANDARD TROTTERS.			
Best mare, Wanda	Wm. McConnell ..	Yreka	\$20 00
CLASS VIII—COLTS.			
Best yearling colt, Argonaut	R. E. Rader.....	Mayten	\$5 00
Best two years old colt, Maud	R. E. Rader.....	Mayten	\$10 00
CLASS IX—JACKS AND MULES.			
Best span mules, Beck and Jule.....	S. D. Prather.....	Montague.....	\$20 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBRED CATTLE.			
Jersey bull, John Roney.....	Ed. McNulty.....	Yreka	\$25 00
Aberdeen Angus bull, Charger	S. D. Prather.....	Montague.....	\$15 00
Jersey cow, Daisy	Geo. Fiock.....	Yreka	\$15 00
CLASS II—SWEEPSTAKES.			
Charger, two years old bull.....	S. D. Prather.....	Montague.....	\$15 00
Birdie, seventeen months old heifer.....	F. Riley	Yreka	\$10 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
POULTRY.			
Best half dozen Dominique chickens	E. L. Conrad.....	Mt. Shasta.....	\$2 00
Best pair Partridge Cochins.....	Mrs. E. H. Auten-rieth.....	Yreka	\$2 00
Best pair Plymouth Rock chickens.....	Mrs. E. H. Auten-rieth.....	Yreka	\$2 00
Best pair Cochins.....	Bonner McConnell	Yreka	\$2 00
Best pair Bantam chickens.....	Johnny Pashburg.	Yreka	\$2 00

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
MECHANICAL PRODUCTIONS, ETC.			
Best display of tinware.....	O. A. Freiben.....	Sawyer's Bar.....	\$5 00
Best farm wagon.....	Swan & Lemay.....	Yreka.....	\$8 00
Best grain cleaner, patented (special).....	L. Reynolds.....	Yreka.....	\$5 00
Best display of marble.....	J. B. Russell.....	Yreka.....	Diploma.
Best picture frame (special).....	J. Q. Mathewson.....	Yreka.....	\$1 00

SEVENTH DEPARTMENT.

NEEDLE, SHELL, AND WAX WORK, CLOTHING, ETC.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Best whisk broom case (special).....	Mrs. A. Iffland.....	Yreka.....	\$1 00
Best waste basket.....	Mrs. A. Iffland.....	Yreka.....	\$1 50
Best basket of paper flowers.....	Miss Minnie Iffland.....	Yreka.....	\$1 00
Best silk plush banner.....	Miss Mary Wetzle.....	Yreka.....	\$2 50
Best crazy patchwork quilt (special).....	Mrs. A. Wetzle.....	Yreka.....	\$5 00
Best patchwork quilt.....	Mrs. J. Knapp.....	Yreka.....	\$2 50
Best rick-rack apron.....	Mrs. C. Herzog, Jr.....	Yreka.....	\$1 50
Best table scarf embroidery.....	Mrs. E. H. Schofield.....	Yreka.....	\$3 00
Best etching, laundry bag (special).....	Mrs. E. H. Schofield.....	Yreka.....	\$1 00
Best worked button holes (special).....	Mrs. E. H. Schofield.....	Yreka.....	\$1 50
Best sofa pillow, kensington work.....	Mrs. Theo. Young.....	Yreka.....	\$2 50
Best sofa pillow, crazy work (special).....	Mrs. Theo. Young.....	Yreka.....	\$2 50
Best laundered shirt.....	Mrs. Theo. Young.....	Yreka.....	\$2 50
Best knit ruching (special).....	Mrs. Hetschell.....	Yreka.....	\$1 00
Best fancy cotton knitting (special).....	Mrs. Hetschell.....	Yreka.....	\$1 00
Best feather-edge trimming.....	Mrs. Hetschell.....	Yreka.....	\$2 00
Best crochet trimming.....	Mrs. Hetschell.....	Yreka.....	\$2 00
Best hair and horn work.....	Mrs. Hetschell.....	Yreka.....	\$2 50
Best canvas tidy.....	Miss Amelia Hetschell.....	Yreka.....	\$1 50
Best knit woolen stocking.....	Miss Mary Hetschell.....	Yreka.....	\$1 00
Best etching, splashier (special).....	Miss Mary Hetschell.....	Yreka.....	\$1 50
Best chenille embroidery.....	Miss Alice McConaughy.....	Yreka.....	\$2 00
Best etching, towel.....	Miss Alice McConaughy.....	Yreka.....	\$1 50
Best crochet, fascinator.....	Miss Aggie Vance.....	Yreka.....	\$1 00
Best java canvas tidy.....	Miss Minnie Pashburg.....	Yreka.....	\$1 50
Best silk handkerchief box.....	Miss Amelia Huseman.....	Yreka.....	\$1 50
Best hand sewing.....	Miss Clara B. Murray.....	Yreka.....	\$2 00
Best silk applique work.....	Miss Carrie Walbridge.....	Yreka.....	\$5 00
Best glove and handkerchief box (special).....	Miss Katie Peters.....	Yreka.....	\$1 50
Best patchwork quilt.....	Miss Rosa Fried.....	Yreka.....	\$2 50
Best silk quilt.....	Miss Emma Davis.....	Mt. Shasta.....	\$5 00
Best silk crazy patchwork pincushion.....	Miss Minnie Patton.....	Fort Jones.....	\$1 50

SEVENTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II—BREAD, BUTTER, PRESERVES, CANNED FRUIT, ETC.			
Fresh peaches	Mrs. A. Iffland	Yreka	\$1 00
Grape jelly	Mrs. J. Knapp	Yreka	\$1 50
Home-made bread	Mrs. J. Knapp	Yreka	\$2 50
Fresh wild plums	Mrs. L. Huseman	Yreka	\$1 00
Fresh red plums	Mrs. L. Huseman	Yreka	\$1 00
Wild plum jelly	Mrs. L. Huseman	Yreka	\$1 50
Cucumber pickles	Mrs. L. Huseman	Yreka	\$1 00
Brandy peaches	Mrs. L. Huseman	Yreka	\$1 00
Walnut cake	Mrs. L. Huseman	Yreka	\$1 50
Dried apples	Mrs. N. D. Julian	Yreka	\$1 00
Dried plums	Mrs. N. D. Julian	Yreka	\$1 00
Dried peaches	Mrs. N. D. Julian	Yreka	\$1 00
Moonshine	Mrs. C. Herzog, Sr.	Yreka	\$1 00
Rusks	Mrs. C. Herzog, Sr.	Yreka	\$1 00
Blackberry jelly	Mrs. J. Pashburg	Yreka	\$1 50
Sour pickles	Mrs. J. Pashburg	Yreka	\$1 00
Fresh blackberries	Mrs. J. Pashburg	Yreka	\$1 00
Fresh tomatoes	Mrs. J. Pashburg	Yreka	\$1 00
Currant jelly	Miss Etta Pashburg	Yreka	\$1 50
Elderberry jelly	Miss Etta Pashburg	Yreka	\$1 50
Gold cake	Miss Etta Pashburg	Yreka	\$1 00
Preserved peaches	Miss Alice McConaughy	Yreka	\$1 00
Tomato catsup	Miss Emma Schlagle	Yreka	\$1 50
Cocoanut cake	Miss Clara Hetschell	Yreka	\$1 50
Plum jelly	Miss Augusta Hetschell	Yreka	\$1 50
Fruit cake	Miss Nelia Hawkins	Yreka	\$2 50
Raised biscuit	Mrs. A. Hawkins	Yreka	\$1 00
Fresh green gages	Mrs. A. Hawkins	Yreka	\$1 00
Fresh plums	Mrs. A. Hawkins	Yreka	\$1 00
Fresh currants	Mrs. A. Hawkins	Yreka	\$1 00
Crabapple butter	Mrs. A. Hawkins	Yreka	\$1 00
Chittio sauce	Mrs. A. Hawkins	Yreka	\$1 50
Pickle pears	Mrs. A. Hawkins	Yreka	\$1 00
Quince jelly	Mrs. A. Hawkins	Yreka	\$1 50
Pound cake	Mrs. A. Hawkins	Yreka	\$1 00
Huckleberry jelly	Mrs. A. Hawkins	Yreka	\$1 50
Crabapple jelly	Mrs. A. Hawkins	Yreka	
Apple jelly	Miss Emma Davis	Mt. Shasta	\$1 50
Fresh raspberries	Miss Emma Davis	Mt. Shasta	\$1 00
Fresh prunes	Miss Emma Davis	Mt. Shasta	\$1 00
Dried prunes	Miss Emma Davis	Mt. Shasta	\$1 00
Dried corn	Miss Emma Davis	Mt. Shasta	\$1 00
Pickled peaches	Miss Emma Davis	Mt. Shasta	\$1 00
Tomato sauce	Miss Emma Davis	Mt. Shasta	\$1 50
Grape preserves	Miss Emma Davis	Mt. Shasta	\$1 00
Grape catsup	Miss Emma Davis	Mt. Shasta	\$1 50
Fresh butter	Mrs. Thos. Patton	Fort Jones	\$2 50
CLASS III—JUVENILE DEPARTMENT.			
Quilt patches	Martha Knapp	Yreka	\$1 00
Woolen rug	Annie Murray	Yreka	\$1 00
Crochet work	Daisy Pashburg	Yreka	\$1 50
Rickrack work (done by boy)	Albert Herzog	Yreka	\$1 00
Specimen of writing	Orris Harmon, twelve years	Yreka	\$2 50
Pound cake	Mary Hetschell	Yreka	\$1 00
Specimen of writing	Mary Hetschell, eleven years	Yreka	\$2 50
Specimen of writing	Clara Hetschell, thirteen years	Yreka	\$2 50
Pencil drawing	Clara Hetschell	Yreka	\$2 50

SEVENTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS IV—GREEN FRUIT.			
Best variety of pears (special)	N. D. Julian	Yreka	\$2 50
Best freestone peaches	N. D. Julian	Yreka	\$2 50
Best grapes	N. D. Julian	Yreka	\$2 50
Best ten varieties of apples	N. D. Julian	Yreka	\$5 00
Best Italian chestnuts (special)	N. D. Julian	Yreka	\$2 50
Best almonds	N. D. Julian	Yreka	\$2 50
CLASS V—AGRICULTURAL PRODUCTIONS.			
Fifty pounds of oats	J. P. Woods	Fort Jones	\$5 00
Fifty pounds of wheat	Isaac Davis	Mt. Shasta	\$5 00
Best bacon (one half of hog)	E. D. Conrad	Mt. Shasta	\$5 00
Best display of squashes	Perry Hoyt	Mt. Shasta	\$2 00
Best mammoth squash	Perry Hoyt	Mt. Shasta	\$1 00
Best small monmouth squash	Perry Hoyt	Mt. Shasta	\$1 00
Best bullnose peppers	Perry Hoyt	Mt. Shasta	\$1 00
Best watermelon (special)	G. W. Julian	Yreka	\$1 00
Best casaba (special)	G. W. Julian	Yreka	\$1 00
Best broomcorn (special)	G. W. Julian	Yreka	\$2 50
Best peas (special)	N. D. Julian	Yreka	\$2 50
Best display of vegetables (special)	Anton Foster	Hawkinsville	\$5 00
Best plum tomatoes (special)	Anton Foster	Hawkinsville	\$1 00
Best smooth turkey tomatoes	Anton Foster	Hawkinsville	\$2 50
Best early rose potatoes	Anton Foster	Hawkinsville	\$5 00
Best white machinee potatoes	Anton Foster	Hawkinsville	\$5 00
Best mammoth sugar corn	Anton Foster	Hawkinsville	\$2 50
Best flathead cabbage	Anton Foster	Hawkinsville	\$2 50
Best hubbard squash	Anton Foster	Hawkinsville	\$1 00
Best flour (fifty pounds)	Vance & Walbridge	Yreka	\$5 00
Best cheese	F. Riley	Yreka	\$5 00
CLASS VI—WINE, CIDER, VINEGAR, ETC.			
Red currant wine	Mrs. L. Huseman	Yreka	\$2 00
White currant wine	Miss E. Schlagle	Yreka	\$2 00
Blackberry wine	Miss E. Schlagle	Yreka	\$2 00
CLASS VII—FINE ARTS.			
Painting on felt (special)	Miss M. Iffland	Yreka	\$2 50
Painting on china	Miss M. Iffland	Yreka	\$2 50
Painting on satin	Miss M. Iffland	Yreka	\$2 50
Painting on velvet	Miss Alice Powers	Yreka	\$2 50
Painting on mirror	Miss Alice Mc- Conaughy	Yreka	\$2 50
Plaque (porcelain) painting	Miss May Wetzel	Yreka	\$2 50
Kensington painting	Miss A. Ringe	Yreka	\$2 50
Crayon drawing on canvas (special)	Miss Aggie Vance	Yreka	\$5 00
Charcoal drawing on canvas (special)	Miss Aggie Vance	Yreka	\$2 50
Best oil painting	Mrs. E. H. Auten- reith	Yreka	\$10 00
CLASS VIII—FLORALS.			
Best hanging plants	Mrs. C. Herzog, Sr.	Yreka	\$1 00
Best house plants	Mrs. C. Herzog, Sr.	Yreka	\$5 00
Second best house plants	Mrs. Theo. Young	Yreka	\$2 50
Third best house plants	Mrs. L. Huseman	Yreka	\$2 00
Vase of straw flowers	Miss E. Schlagle	Yreka	\$1 00
Best variety of cut flowers	Miss Lena Fried	Yreka	\$2 50
CURIOSITIES.			
Sea moss, pressed (special)	Miss Alice Mc- Conaughy	Yreka	\$2 00
Sea moss, variety (special)	Miss Robertson	Yreka	\$2 00
Rocks from Siskiyou tunnel	Miss Carrie Swan	Yreka	

SPEED PROGRAMME.

WEDNESDAY, SEPTEMBER 28, 1887.

RACE No. 1—RUNNING.

Purse, one hundred and twenty-five dollars. Seventy per cent to first horse; twenty per cent to second; ten per cent to third. Entrance, ten per cent of purse. (All purses at this meeting are divided as above, except they are otherwise specified.) Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
White Cloud, by Woodbury-----	C. B. Roos -----	Crescent City.
Jubilee, by Norfolk -----	Joe Stephens -----	Etna Mills.
Seven and a Half, by Bazaar-----	Robert Morton -----	Yreka.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. White Cloud -----	White Cloud ----- 1
2. Jubilee -----	Jubilee ----- 2
3. Seven and a Half (drawn)-----	

Time—1:51.

RACE No. 2—TROTTING.

Purse, two hundred dollars. Free for all horses that have never beaten three minutes. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady Beech, by Altamont-----	James Sutherland -----	Yreka.
Altana, by Altamont -----	L. Swan -----	Yreka.
Sir Walter, Jr., by Sir Walter -----	J. C. Evans -----	Yreka.
Honest Mike, by Pennoyer's Mike -----	J. P. Woods -----	Fort Jones.
Gray Dave, by Pennoyer's Mike -----	Thomas Raymond-----	Alturas.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Lady Beech -----	Lady Beech----- 1 1
2. Altana -----	Altana ----- 2 2
(Others all drawn)-----	

Time—2:38; 2:39.

RACE No. 3—TROTTING.

Purse, one hundred dollars. Free for all two-year olds owned in the district prior to May 1, 1887. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Aggie V, by Graduate-----	L. Swan -----	Yreka.
Kalama -----	Thomas Raymond-----	Alturas.
Belle, by Graduate-----	Julius Fitten -----	Yreka.

RACE No. 3—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Kalama	Aggie V..... 1 1
2. Aggie V	Kalama..... 2 2
3. Belle (drawn).....	

Time—3:40; 3:43.

THURSDAY, SEPTEMBER 29, 1887.

RACE No. 4—RUNNING.

Purse, one hundred and fifty dollars. Free for all. One half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie R, by Scamperdown.....	E. Flitner.....	Yreka.
Smith River, by unknown.....	Horace Mitchell.....	Yreka.
Little Cap, by unknown.....	G. Tomblinson.....	Fort Bidwell.
Bessie Burk, by Gladiator.....	E. S. Howard.....	Fort Jones.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Minnie R..... 113 lbs.	Minnie R..... 1 1
2. Little Cap..... 120 lbs.	Little Cap..... 2 2
3. Smith River..... 137 lbs.	Smith River..... 3 3

Time—0:50; 0:49 $\frac{3}{4}$.

RACE No. 5—TROTTING.

2:40 Class. Purse, two hundred dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady Beech, by Altamont.....	Jas. Sutherland.....	Yreka.
Wanda, by Altamont.....	J. C. Evans.....	Yreka.
Dan, by Abdalah.....	Ned O'Neal.....	Yreka.
Frank, unknown.....	J. D. Campbell.....	Redding.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Wanda.....	Wanda..... 1 1 1
2. Frank.....	Frank..... 2 2 2
(Others drawn).....	

Time—2:58; 2:50; 3:00.

RACE No. 6—RUNNING.

Purse, fifty dollars. Free for all saddle horses that have never been trained. Five dollars entrance added. First horse, seventy per cent; second, thirty per cent. One half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Yellowhawk.....	Tom Miles.....	Fort Klamath, Or.
Dick.....	J. McDonough.....	Phoenix, Or.
Topsy.....	H. Flannigan.....	Yreka.
Billy.....	J. Johnson.....	Redding.

RACE No. 6—RUNNING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Yellowhawk	Yellowhawk
2. Dick	Dick
3. Billy	Billy
4. Topsy	Topsy
<i>Time—0:53.</i>	

FRIDAY, SEPTEMBER 30, 1887.

RACE No. 7—RUNNING.

Purse, one hundred and fifty dollars. Three fourths of a mile and repeat.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
White Cloud, by Woodbury	C. B. Roos	Crescent City.
Jubilee, by Norfolk	Joe. Stephens	Etna Mills.
Minnie R, by Scamperdown	E. Flitner	Yreka.
Smith River, unknown	H. Mitchell	Yreka.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Jubilee	White Cloud
2. White Cloud	Minnie R
3. Minnie R	Jubilee
4. Smith River (drawn)	
<i>Time—1:19; 1:22.</i>	

RACE No. 8—TROTTING.

Special Purse, one hundred and twenty-five dollars. Mile heats; two in three; named horses.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Sir Walter, Jr., by Sir Walter	J. C. Evans	Yreka.
Alturas	Thos. Raymond	Alturas.
Venus	— Laine	Mt. Shasta.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Alturas	Sir Walter, Jr.
2. Sir Walter, Jr.	Alturas
3. Venus	Venus
<i>Time—3:06; 3:01½.</i>	

RACE No. 9—RUNNING.

Match race for four hundred dollars a side. Three hundred yards dash.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Ten Cents	J. C. Tolman	Ashland, Or.
Nellie Gray	E. C. Goodrick	Phoenix, Or.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Ten Cents	Nellie Gray
2. Nellie Gray	Ten Cents
<i>No time taken.</i>	

SATURDAY, OCTOBER 1, 1887.

RACE NO. 10—RUNNING.

Special. Purse, fifty dollars. Entrance, free. First horse, thirty-five dollars; second, fifteen dollars. One half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bessie Burk	E. S. Howard	Fort Jones.
Yellowhawk	Tom Miles	Fort Klamath, Or.
Dick	J. McDonagh	Phoenix, Or.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Bessie Burk	Bessie Burk	1
2. Yellowhawk	Yellowhawk	2
3. Dick	Dick	3
Time—0:51½.		

RACE NO. 11—RUNNING.

For three-year olds. Entrance, free. Purse, seventy-five dollars. First horse, fifty dollars; second, twenty-five dollars. One half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rubie, by Clubfoot	A. Magill	Yreka.
Seven and a Half, by Bazaar	Wm. Carrico	Battle Creek.
Little Dave, by Glencoe	E. S. Howard	Fort Jones.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Rubie	Rubie	1
2. Seven and a Half	Seven and a Half	0
3. Little Dave	Little Dave	0
Time—0:55.		

RACE NO. 12—RUNNING.

Special. Purse, seventy-five dollars. Entrance, free. First horse, fifty dollars; second, twenty-five dollars. One half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Smith River, sire unknown	H. Mitchell	Yreka.
Norton, sire unknown	F. Flitner	Yreka.
Jubilee, by Norfolk	Joe. Stephens	Etna Mills.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Smith River	Norton	1
2. Norton	Jubilee	2
3. Jubilee	Smith River flew the track.	
Time—0:52.		

TRANSACTIONS

OF THE

ELEVENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Plumas, Sierra, Lassen, and Modoc.

OFFICERS OF THE ASSOCIATION.

JOHN W. THOMPSON	President.
R. L. DAVIS	Secretary.
D. C. HYER	Treasurer.

DIRECTORS.

JOHN W. THOMPSON	Quincy, Plumas County.
B. F. CHANDLER	Quincy, Plumas County.
JOHN McBETH	Butte Valley, Plumas County.
J. S. BRANSFORD	Greenville, Plumas County.
J. C. CARTER	Crescent Mills, Plumas County.
D. B. KEYS	Loyalton, Sierra County.
W. P. HALL	Susanville, Lassen County.
J. D. BYERS	Susanville, Lassen County.

REPORT.

November 30, 1887.

To the honorable the State Board of Agriculture :

GENTLEMEN: The Directors of the Eleventh District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

R. L. DAVIS, Secretary.

RECEIPTS AND EXPENDITURES.

<i>Receipts.</i>		
Balance from 1886	\$191 69	
Subscriptions	3,040 00	
Gate and door money	1,955 20	
Privileges	735 00	
Entrances to races	1,340 00	
State warrant	1,500 00	
		\$8,761 89
<i>Expenditures.</i>		
Premiums	\$1,565 50	
Purses	3,531 50	
Sundry expenses	1,732 45	
		\$6,829 45
Balance on hand		\$1,932 44

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS "B"—DRAFT HORSES—STALLIONS.			
Stallion, three years old and over.....	Jacob McKissick..	Long Valley	\$25 00
Stallion, three years old and over.....	Wm. Dow	Susanville	\$15 00
Stallion, one year old.....	G. R. Flournoy..	Big Valley	\$15 00
MARES.			
Span of draft mares.....	Charles Barham..	Janesville.....	\$20 00
Best draft mare.....	Charles Barham..	Janesville.....	\$15 00
CLASS "C"—ROADSTERS—STALLIONS.			
Stallion, three years old and over.....	A. L. Tunison.....	Merrillville	\$20 00
Stallion, three years old and over.....	W. J. Segraves.....	Susanville	\$10 00
MARES.			
Mare, three years old and over.....	W. P. Hall.....	Susanville	\$20 00
Mare, three years old and over.....	Allen Wood	Susanville	\$10 00
CLASS "D"—HORSES OF ALL WORK—STALLIONS.			
Stallion, three years old and over.....	C. C. Graves.....	Beiber	\$25 00
Stallion, three years old and over.....	W. P. Hall.....	Susanville	\$10 00
Stallion, two years old.....	J. D. Byres.....	Janesville.....	\$20 00
Stallion, two years old.....	J. T. Alexander ..	Susanville	\$10 00
MARES AND COLTS.			
Mare and four colts, family.....	E. G. Baugham ..	Susanville	\$20 00
Mare, three years old.....	L. E. Richter.....	Susanville	\$10 00
Mare, three years old and over.....	E. G. Baugham ..	Susanville	\$20 00
Mare and two colts.....	W. J. Segraves.....	Susanville	\$10 00
Mare and one colt.....	W. J. Segraves.....	Susanville	\$15 00
Mare, one year old.....	J. Scattini	Susanville	\$15 00
Mare and colt.....	R. D. Bass.....	Janesville.....	\$10 00
Suckling colt.....	W. P. Hall.....	Susanville	\$10 00
Suckling colt.....	Allen Wood	Susanville	\$5 00
CLASS "E"—JACKS.			
Jack, three years old and over.....	G. R. Flournoy....	Big Valley.....	\$20 00
CLASS "F"—JERSEY CATTLE—BULLS.			
Alameda 4th, three years old and over....	W. P. Hall.....	Susanville	\$25 00
Alameda 5th, two years old and over.....	W. P. Hall.....	Susanville	\$5 00
COWS.			
Belle 2d, three years old and over.....	W. P. Hall.....	Susanville	\$15 00
Jennie, three years old and over.....	W. P. Hall.....	Susanville	\$10 00
Belle 3d, two years old and over.....	W. P. Hall.....	Susanville	\$10 00
Nellie, calf.....	W. P. Hall.....	Susanville	\$10 00
Bess, calf.....	W. P. Hall.....	Susanville	\$5 00
CLASS "G"—DURHAM CATTLE—BULLS.			
King David, three years old and over....	Isaac Hall.....	Greenville	\$25 00
Bimetallist, two years old.....	Moses Chase.....	Beckwith	\$20 00
Jackson, one year old.....	Emmerson & Hos- selkus	Susanville	\$15 00
CLASS "H"—HEREFORDS—BULLS.			
Horace, three years old and over.....	A. Gallatin.....	Susanville	\$25 00
Earl of March, three years old and over....	A. Gallatin.....	Susanville	\$15 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS "1"—GRADED CATTLE—BULLS.			
—, two years old	A. Gallatin	Susanville	\$10 00
Moro, three years old and over	Moses Chase	Beckwith	\$15 00
—, three years old and over	I. Hall	Greenville	\$10 00
Moro 2d, one year old	Moses Chase	Beckwith	\$7 50
Blaine, one year old	I. Hall	Greenville	\$2 50
Golddust, six months old	I. Hall	Greenville	\$5 00
John, six months old	I. Hall	Greenville	\$2 50
Laphone, two years old	I. Scattini	Susanville	\$5 00
COWS.			
Hannah Ulch, three years old and over	I. Hall	Greenville	\$15 00
—, three years old and over	Milton Cain	Susanville	\$10 00
Beauty, three years old and over	I. Hall	Greenville	\$10 00
Nellie, two years old and over	I. Hall	Greenville	\$5 00
Mollie, calf, one year old	W. P. Hall	Susanville	\$10 00
Lizzie, calf, one year old	J. T. Alexander	Susanville	\$5 00
Calf, six months old	I. Hall	Greenville	\$5 00
Calf, six months old	I. Hall	Greenville	\$2 50
WORK CATTLE.			
Yoke of steers, three years old and over	I. Hall	Greenville	\$20 00
Yoke of steers, three years old and over	E. B. Shumway	Horse Lake	\$10 00
CLASS "J"—SPECIAL, MATCHED WORK CATTLE.			
Best yoke of matched cattle	E. B. Shumway	Horse Lake	\$10 00
CLASS "K"—SPECIAL, GRADED GALLOWAYS.			
Herd of graded Galloways	Jacob McKissick	Long Valley	\$20 00
CLASS "L"—SHEEP.			
Pen of four sheep	J. R. Cain	Susanville	\$10 00
CLASS "M"—THOROUGHBRED SWINE.			
Berkshire boar	J. W. Glascock	Susanville	\$15 00
Boar, one year old	D. W. Ridenour	Susanville	\$10 00
Sow, Bess (Duroc)	W. P. Hall	Susanville	\$10 00
Sow, Susie (Duroc)	W. P. Hall	Susanville	\$5 00
Pen of four pigs	W. P. Hall	Susanville	\$10 00
Pen of four pigs	James McCollum	Susanville	\$5 00
CLASS "N"—POULTRY.			
Trio of Langshans	Mrs. W. P. Hall	Susanville	\$2 50
Trio of Plymouth Rocks	Mrs. W. P. Hall	Susanville	\$2 50
Trio of White Leghorns	Mrs. W. P. Hall	Susanville	\$2 50
Trio of Brown Leghorns	Mrs. W. P. Hall	Susanville	\$2 50
Trio of Houdans	Mrs. W. P. Hall	Susanville	\$2 50
Trio of Wyandottes	Mrs. W. P. Hall	Susanville	\$2 50
Trio of Black Spanish	Mrs. W. P. Hall	Susanville	\$2 50
Trio of Bronze turkeys	Mrs. W. P. Hall	Susanville	\$2 50
Best exhibit of fowls	Mrs. W. P. Hall	Susanville	\$5 00
CLASS "O"—DUCKS.			
Trio of Pekin ducks	Oscar Howell	Susanville	\$2 50
CLASS "P"—MACHINERY.			
Hay stacker	James McCalm	Susanville	\$10 00
Swinging hay carrier for barn	James McCalm	Susanville	\$10 00
CLASS "Q"—VEHICLES.			
Top buggy	K. McLeod	Greenville	\$10 00
Lawrence surrey	K. McLeod	Greenville	\$10 00
Open buggy	K. McLeod	Greenville	\$15 00
Spring wagon	A. Otto	Susanville	\$20 00
CLASS "R"—HARNESS AND SADDLERY.			
Double carriage harness	C. M. Stall	Susanville	\$10 00
Single buggy harness	C. M. Stall	Susanville	\$5 00
Side saddle	C. M. Stall	Susanville	\$5 00

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Mexican saddle	C. M. Stall	Susanville	\$2 50
Mexican bridle	C. M. Stall	Susanville	\$1 00
American bridle	C. M. Stall	Susanville	\$1 00
Double team harness	L. H. Moore	Susanville	\$10 00
Single harness	L. H. Moore	Susanville	\$5 00
Double buggy harness	L. H. Moore	Susanville	\$5 00
Cowboy saddle	L. H. Moore	Susanville	\$5 00
Pair of chapparos	L. H. Moore	Susanville	\$2 00
Cowboy bridle	L. H. Moore	Susanville	\$2 00
Caronas	L. H. Moore	Susanville	\$2 00
Pair of silver inlaid spurs	L. H. Moore	Susanville	\$1 00
Lady's leather belt	L. H. Moore	Susanville	\$1 00
Pair of spurs	L. H. Moore	Susanville	\$1 00
CLASS "S"—FURNITURE.			
Lounge bed	J. L. Groton	Susanville	\$5 00
Display of upholstery	J. L. Groton	Susanville	\$3 00
Cabinet	H. Bereman	Susanville	\$10 00
Swift, or reel	Capt. Moody	Susanville	\$3 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—HOUSEHOLD FABRICS.			
Knit quilt	Mrs. Day	Susanville	\$3 00
Husk mats	Mrs. Day	Susanville	\$2 00
Rug	Mrs. Gould	Gibsonville	\$3 00
Knitted collars	Mrs. Gould	Gibsonville	\$2 00
Patchwork quilt	Mrs. Rodgers	Dry Valley	\$4 00
Knitted skirt	Mrs. R. L. Davis	Susanville	\$1 50
Stocking bag	Mrs. R. L. Davis	Susanville	\$1 50
Rug	Mrs. J. W. Broadwell	Janesville	\$1 50
Lady's knit skirt	Mrs. M. E. Hurley	Susanville	\$1 50
Knit socks	Mrs. J. W. Hosselkus	Susanville	\$1 50
Crochet slippers	Mrs. M. K. Leavitt	Quincy	\$1 00
Yarn	Mrs. Day	Susanville	\$2 00
Misses dress	Mrs. J. W. Glascock	Susanville	\$3 00
Lady's dress	Mrs. J. W. Glascock	Susanville	\$10 00
Infant's shirt and socks	Mrs. F. Datta	Susanville	\$1 50
Lady's dress	Mrs. C. W. Burnie	Susanville	\$5 00
Specimens of knitting	Miss Louie Kaulback	Quincy	\$3 00
Rag carpet	Mrs. S. E. Brashear	Susanville	\$5 00
Knit slippers	Miss Amy McNealy	Butt Valley	\$1 50
CLASS II—EMBROIDERY AND FANCY WORK.			
Embroidered shawl	Mrs. Day	Susanville	\$3 00
Wall pocket	Mrs. Day	Susanville	\$1 00
Chair tidies	Mrs. Day	Susanville	\$1 00
Specimen of bead work	Mrs. T. Gould	Gibsonville	\$2 00
Outline pillow shams	Mrs. R. L. Davis	Susanville	\$1 00
Kensington embroidery	Mrs. R. L. Davis	Susanville	\$2 50
Crochet tidy	Mrs. R. L. Davis	Susanville	\$2 00
Outline embroidery	Mrs. R. L. Davis	Susanville	\$1 00
Fancy apron	Mrs. R. L. Davis	Susanville	\$1 50
Outline splashers	Mrs. R. L. Davis	Susanville	\$1 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Lambrequin on canvas	Mrs. R. L. Davis	Susanville	\$2 00
Display of millinery	Mrs. C. W. Burnie	Susanville	\$10 00
Patchwork quilt, silk	Mrs. Day	Susanville	\$7 00
Watch chain, mounted	Miss L. Doyle	Milford	\$1 00
Crochet lace for pillow slips	Mrs. R. L. Davis	Susanville	\$1 00
Key hook	Mrs. R. L. Davis	Susanville	\$1 00
Baby sack	Mrs. R. L. Davis	Susanville	\$1 00
Easel, with flowers and drapery	Miss H. Greehn	Susanville	\$2 50
Red banner (hand painted)	Miss H. Greehn	Susanville	\$2 50
Toilet set	Miss Belle Hauk	Susanville	\$2 00
Silk crazy quilt	Mrs. J. C. Wemple	Milford	\$7 00
Tablespread	Mrs. J. C. Wemple	Milford	\$3 00
Work basket	Mrs. J. C. Wemple	Milford	\$1 00
Home-made buggy robe	Mrs. W. M. McClelland	Susanville	\$2 50
Log cabin wool quilt	Mrs. Hasselkus	Susanville	\$5 00
Bedspreads	Mrs. Hasselkus	Susanville	\$2 00
Crochet shawl	Mrs. Hasselkus	Susanville	\$2 00
Crochet skirt	Mrs. Hasselkus	Susanville	\$1 50
Zephyr wreath	Mrs. Morris Smith	Susanville	\$2 00
Tarletan bouquet	Mrs. Morris Smith	Susanville	\$2 50
Hair wreath	Mrs. Morris Smith	Susanville	\$2 50
Braid	Mrs. Morris Smith	Susanville	\$2 50
Lambrequin	Mrs. B. Hamilton	Susanville	\$1 00
Card-board work	Mrs. B. Hamilton	Susanville	\$1 50
Crazy quilt and shams	Mrs. B. Hamilton	Susanville	\$3 00
Bead watch chain	Mrs. P. Bagin	Susanville	\$2 00
Hemstitching	Miss Louie Kaulback	Quincy	\$1 00
Crewel embroidery	Miss Louie Kaulback	Quincy	\$2 00
Rickrack trimming	Miss Louie Kaulback	Quincy	\$2 00
Outline embroidery	Mrs. M. K. Leavitt	Quincy	\$2 50
Suit of lady's underclothes	Miss Minnie Ranny	Quincy	\$3 00
Infant dress (hand made)	Miss Minnie Ranny	Quincy	\$1 00
Macrame work	Mrs. J. Cahlan	Susanville	\$1 50
Quilt	Mrs. M. Rodgers	Dry Valley	\$4 00
Applique work	Mrs. J. Cahlan	Susanville	\$3 00
Outline tidy	Mrs. J. Cahlan	Susanville	\$2 00
Pillow shams	Mrs. S. E. Brashear	Susanville	\$2 00
Embroidered mirror	Mrs. Viola Wells	Susanville	\$2 50
Pincushion	Mrs. W. P. Hall	Susanville	\$1 50
Best splasher	Miss Amy McNealy	Butt Valley	\$1 50
Pair of lamp mats	Mrs. W. P. Hall	Susanville	\$2 00
Lace work	Miss Amy McNealy	Butt Valley	\$5 00
Cotton skirt	Miss Amy McNealy	Butt Valley	\$2 50
Canvas tidy	Miss Amy McNealy	Butt Valley	\$2 00
Hemstitching	Miss Amy McNealy	Butt Valley	\$3 00
Display of point lace	Miss Jessie McBeth	Butt Valley	\$5 00
Outline pillow shams	Mrs. J. McBeth	Butt Valley	\$2 00
Kensington embroidery	Miss Lou Hudson	Prattville	\$5 00
Crochet shawl	Mrs. J. S. Bransford	Greenville	\$2 50
Crochet tidy	Mrs. J. S. Bransford	Greenville	\$2 00
Outline splasher	Mrs. J. S. Bransford	Greenville	\$1 00
Specimen of crochet work	Mrs. Frank Datta	Susanville	\$2 00
Knitted work	Mrs. Frank Datta	Susanville	\$3 00
Crochet bedspread	Mrs. Frank Datta	Susanville	\$3 00
Linen embroidery (hand work)	Mrs. Frank Datta	Susanville	\$2 00
Mantel drape	Mrs. M. Marsteller	Susanville	\$3 00
Side bracket cover	Mrs. M. Marsteller	Susanville	\$1 00
Tufted pincushion	Mrs. M. Marsteller	Susanville	\$1 50
Chenille sofa cushion	Mrs. M. Marsteller	Susanville	\$2 00
Table scarf	Mrs. M. Marsteller	Susanville	\$2 00
Silk stockings	Mrs. M. Marsteller	Susanville	\$1 50

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Cotton skirt (hand made).....	Mrs. J. T. Alexander	Susanville	\$1 00
Feather wreath	Mrs. J. B. McClelland	Fall River	\$2 00
Set of tidies	Mrs. C. M. Stall	Susanville	\$2 00
Pillow cases	Mrs. J. C. Hember	Janesville	\$2 00
Apron trimming	Mrs. C. M. Stall	Susanville	\$1 50
Scarf	Mrs. C. H. Lawrence	Greenville	\$2 00
Buggy robe	Miss M. Bennett	Susanville	\$2 50
Stand cover	Mrs. B. Hamilton	Susanville	\$3 00
Crochet scarf	Mrs. J. C. Marten	Susanville	\$1 00
Infants' fancy knit hose	Mrs. C. H. Lawrence	Greenville	\$1 50
CLASS III—CHILDREN'S DEPARTMENT.			
Banner	Miss Bee Partridge	Susanville	\$1 00
Toilet set	Miss Bee Partridge	Susanville	\$1 00
Specimen of crochet lace	Miss Alice Craig	Susanville	\$2 00
Cake	Miss M. Perkins	Susanville	\$1 50
Bread	Miss K. Perkins	Susanville	\$1 50
Child's cabinet	Master Smith	Susanville	\$2 00
Tartleton wreath	Master Smith	Susanville	\$2 00
Card album	Miss F. Kaulback	Quincy	\$1 00
Outline work	Miss F. McBeth	Butt Valley	\$1 00
Outline splasher	Miss S. Bransford	Greenville	\$1 00
Sketches, crayon	Miss Ione Ross	Long Valley	\$2 00
Wreath	Miss H. Ridenour	Susanville	\$2 00
CLASS IV—CANNED FRUITS, JELLIES, PRESERVES, ETC.			
Cherry preserves	Mrs. S. A. McClelland	Susanville	\$2 00
Raspberry jam	Mrs. S. A. McClelland	Susanville	\$2 00
Cherries, canned	Mrs. S. A. McClelland	Susanville	\$2 00
Raspberries, preserved	Mrs. S. A. McClelland	Susanville	\$2 00
Blackberries, preserved	Mrs. S. A. McClelland	Susanville	\$2 00
Peaches, preserved	Mrs. S. A. McClelland	Susanville	\$2 00
Plums, canned	Mrs. S. A. McClelland	Susanville	\$2 00
Grapes, canned	Mrs. S. A. McClelland	Susanville	\$2 00
Plum butter	Mrs. S. A. McClelland	Susanville	\$2 00
Strawberry butter	Mrs. S. A. McClelland	Susanville	\$2 00
Blackberry butter	Mrs. S. A. McClelland	Susanville	\$2 00
Raspberry butter	Mrs. S. A. McClelland	Susanville	\$2 00
Honey	Mrs. S. A. McClelland	Susanville	\$2 00
Pear preserves	Mrs. B. Hamilton	Susanville	\$2 00
Tomato preserves	Mrs. B. Hamilton	Susanville	\$2 00
Plum jelly	Mrs. B. Hamilton	Susanville	\$2 00
Cauliflower, canned	Mrs. B. Hamilton	Susanville	\$2 00
Pears, canned	Mrs. B. Hamilton	Susanville	\$2 00
Tomatoes, canned	Mrs. B. Hamilton	Susanville	\$2 00
Ten pounds of butter	Mrs. J. W. Hosselkus	Susanville	\$5 00
Cheese	I. Scattini	Susanville	\$5 00
Crabapple jelly	Mrs. C. H. Burnie	Susanville	\$2 00
Preserved blackberries	Mrs. C. H. Burnie	Susanville	\$2 00
Grape catsup	Mrs. C. H. Burnie	Susanville	\$2 00
Preserved strawberries	Mrs. C. H. Burnie	Susanville	\$2 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Peach preserves.....	Mrs. W. M. McClelland	Susanville	\$2 00
Chowchow	Mrs. W. M. McClelland	Susanville	\$2 00
Sponge cake.....	Mrs. L. C. Stiles	Susanville	\$2 00
Cookies	Mrs. L. C. Stiles	Susanville	\$2 00
Salt-rising bread.....	Mrs. L. C. Stiles	Susanville	\$2 00
Raspberry syrup	Mrs. L. C. Stiles	Susanville	\$2 00
Yeast bread.....	J. H. Summers	Susanville	\$2 00
Apple cake.....	Mrs. W. M. McClelland	Susanville	\$2 00
Home-made currant wine.....	Mrs. J. W. Thompson	Quincy	\$2 50
Home-made raspberry wine.....	Mrs. L. C. Stiles	Susanville	\$5 00
CLASS V—PHOTOGRAPHIC WORK, PAINTINGS, AND DRAWINGS.			
Specimen of penmanship.....	Mrs. E. L. Lyringer	Merrillville	\$2 00
Map of California	R. W. Hurlburt	Merrillville	\$2 00
Oil painting, portrait.....	A. B. Cummins	Dry Lake	\$5 00
Lambrequin, painted.....	Mrs. J. Cahlan	Susanville	\$2 50
Collection of paintings.....	Miss C. Thompson	Quincy	\$15 00
Sketches from nature.....	Miss C. Thompson	Quincy	\$5 00
Painting on china.....	Miss C. Thompson	Quincy	\$5 00
Sketches from nature.....	Miss D. Thompson	Quincy	\$3 00
Landscape painting, oil.....	Mrs. A. E. Ross	Long Valley	\$5 00
Photographic views.....	Murray Dunham	Susanville	\$5 00
CLASS VI—FLOWERS, PLANTS, ETC.			
Bouquet of flowers.....	Mrs. Day	Susanville	\$2 00
Collection of plants	Mrs. M. Pickard	Susanville	\$7 50
Collection of fuchsias.....	Mrs. A. Burnie	Susanville	\$2 50
Bouquet of flowers.....	Mrs. W. T. Marten	Susanville	\$3 00
Bouquet of cut flowers.....	Mrs. A. Burnie	Susanville	\$2 00
Collection of plants	Mrs. R. L. Davis	Susanville	\$5 00
CLASS VII—PRINTING.			
Display of printing and job work.....	McKinsey & Hayden	Susanville	\$10 00
CLASS VIII—MINERALS, FOSSILS, METALS.			
Cabinet of minerals and display gold ores.....	H. Bereman	Susanville	\$10 00
CLASS IX—SPECIAL.			
Soda water	McKenzie Bros.	Greenville	\$5 00
CLASS X—VEGETABLES, GRAIN, FRUITS, ETC.			
Sack of rye.....	T. J. Hurlbut	Merrillville	\$5 00
Cauliflower.....	Geo. DeForest	Susanville	\$1 00
Red onions.....	H. J. Washburne	Milford	\$4 00
Beets.....	W. M. McClelland	Susanville	\$2 00
Rutabagas.....	W. M. McClelland	Susanville	\$2 00
Turnips.....	W. M. McClelland	Susanville	\$1 00
Sugar corn	W. M. McClelland	Susanville	\$1 00
Salsify	W. M. McClelland	Susanville	\$1 00
Orange squash.....	W. M. McClelland	Susanville	\$2 00
Red superior potatoes.....	L. E. Richter	Susanville	\$2 50
Watermelons.....	L. E. Richter	Susanville	\$3 00
Celery.....	J. W. Thompson	Quincy	\$4 00
Dried corn	J. W. Hosselkus	Susanville	\$2 00
Dried peas	J. W. Hosselkus	Susanville	\$1 00
Dried beans	J. W. Hosselkus	Susanville	\$2 00
Rose potatoes.....	Morris Smith	Susanville	\$5 00
Hubbard squash.....	Morris Smith	Susanville	\$3 00
Best four varieties apples.....	J. L. McDermitt	Milford	\$10 00
Best two varieties apples.....	J. L. McDermitt	Milford	\$5 00
Best variety apples.....	J. L. McDermitt	Milford	\$2 50
Flemish beets.....	J. L. McDermitt	Milford	\$2 50
Cauliflower.....	W. Sugrove	Susanville	\$4 00
Swedish turnips.....	W. Sugrove	Susanville	\$1 00
Sack of oats.....	Fred. Scott	Greenville	\$10 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Popcorn.....	J. W. Hossekus.....	Susanville.....	\$1 00
Tomatoes.....	Jerry Tyler.....	Milford.....	\$2 50
Field corn.....	Jerry Tyler.....	Milford.....	\$2 00
Red onions.....	Jerry Tyler.....	Milford.....	\$2 00
Belgian beets.....	Jerry Tyler.....	Milford.....	\$2 00
Mammoth squash.....	Jerry Tyler.....	Milford.....	\$3 00
Yellow peaches.....	Jerry Tyler.....	Milford.....	\$2 50
White peaches.....	Jerry Tyler.....	Milford.....	\$1 00
Yellow nectarines.....	Jerry Tyler.....	Milford.....	\$2 50
Winesap apples.....	Jerry Tyler.....	Milford.....	\$1 00
Casaba pumpkin.....	J. T. Marten.....	Susanville.....	\$3 00
Crooked squash.....	J. T. Marten.....	Susanville.....	\$3 00
Superior potatoes.....	J. Cahlan.....	Susanville.....	\$5 00
Strawberries.....	Mrs. Day.....	Susanville.....	\$2 00
Sweet corn.....	J. L. McDermitt.....	Milford.....	\$2 00
Sweet corn.....	W. M. McClelland.....	Susanville.....	\$2 00
Bartlett pears.....	W. M. McClelland.....	Susanville.....	\$2 50
Late rose potatoes.....	J. T. Alexander.....	Susanville.....	\$2 50
Watermelons.....	J. T. Alexander.....	Susanville.....	\$1 50
Muskmelons.....	J. T. Alexander.....	Susanville.....	\$3 00
Belgian carrots.....	J. T. Alexander.....	Susanville.....	\$2 00
Blood turnip beets.....	J. T. Alexander.....	Susanville.....	\$1 00
Danish carrots.....	J. T. Alexander.....	Susanville.....	\$2 00
Tomatoes.....	J. T. Alexander.....	Susanville.....	\$5 00
Cucumbers.....	J. T. Alexander.....	Susanville.....	\$2 00
Popcorn.....	J. T. Alexander.....	Susanville.....	\$2 00
Savoy cabbage.....	J. T. Alexander.....	Susanville.....	\$2 00
Sweet peas.....	J. T. Alexander.....	Susanville.....	\$2 00
White cabbage.....	J. T. Alexander.....	Susanville.....	\$4 00
Blue squash.....	J. T. Alexander.....	Susanville.....	\$1 50
Peppers.....	J. T. Alexander.....	Susanville.....	\$2 00
Field corn.....	J. T. Alexander.....	Susanville.....	\$2 00
Flat turnips.....	J. T. Alexander.....	Susanville.....	\$2 00
Millet.....	J. W. Hossekus.....	Susanville.....	\$2 00
Grapes.....	R. F. Moody.....	Susanville.....	\$3 00
White Elephant potatoes.....	A. J. McKenzie.....	Susanville.....	\$2 50
Husk tomatoes.....	L. L. Frost.....	Susanville.....	\$2 50

SPEED PROGRAMME.

MONDAY, OCTOBER 3, 1887.

RACE No. 1—TROTTING.

Purse, two hundred dollars. Free for all. First money, one hundred and twenty dollars; second, fifty dollars; third, twenty dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sparkle, by Prompter; dam, Starlight.....	G. A. Doherty.....	Crescent Mills.
Engineer, by Buccaneer; dam, by Pedro.....	E. P. Smith.....	Taylorville.
Billy Collins; unknown.....	Charles Sherman.....	Susanville.
George W; unknown.....	Henry Gore.....	Susanville.

Position at Starting.

1. Sparkle.....
2. Billy Collins.....
3. George W.....
4. Engineer (drawn).....

Position at Close.

- | | | |
|--------------------|------|---|
| Sparkle..... | 1 | 1 |
| Billy Collins..... | dis. | |
| George W..... | 2 | 2 |

Time—3:14 $\frac{1}{4}$; 3:06 $\frac{1}{4}$; 3:08 $\frac{1}{2}$.

RACE No. 2—RUNNING.

Purse, one hundred and twenty-five dollars. Three-year olds; free for all. First money, seventy-five dollars; second, thirty-seven and one half dollars; third, twelve and one half dollars. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Duster, by Rifleman; dam, by Copperbottom..	James Henry.....	Chico.
Menlo, by Young Prince; dam, Hattie H.....	M. McCrummon.....	Lincoln.
Nettie Moak, by Glencoe; dam, Bloomsberry..	J. F. Holland.....	Chico.

Position at Starting.

1. Duster.....
2. Nettie Moak.....
3. Menlo.....

Position at Close.

- | | |
|------------------|---|
| Menlo..... | 1 |
| Nettie Moak..... | 2 |
| Duster..... | 3 |

Time—1:59 $\frac{1}{2}$.

RACE No. 3—RUNNING.

Purse, two hundred and fifty dollars. Free for all. First money, one hundred and fifty dollars; second, seventy-five dollars; third, twenty-five dollars. Mile heats; best two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lena, by Acrobat; dam, by Belmont.....	William Lloyd.....	Susanville.
Mayblossom, by Joe H; dam, Maggie S.....	W. P. Todhunter.....	Sacramento.
Rock, by Bob Wooley; dam, Miss Stoner.....	W. P. Todhunter.....	Sacramento.

Position at Starting.

1. Lena.....
2. Mayblossom (did not appear).....
3. Rock (did not appear).....

Position at Close.

Walkover for Lena.

RACE NO. 4—RUNNING.

Purse, one hundred dollars. Free for all. First money, sixty dollars; second, thirty dollars; third, ten dollars. One half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jake Snyder, by Cottontail; dam, by Norfolk.....	Holland & Snyder	Susanville.
Surprise, by Langford; unknown.....	M. McCrimmon	Lincoln.
Cowboy; unknown	S. M. Rovers	Milford.
Colonel; by Joe Hooker	Tenant & Gore	Susanville.
Slim Jim; unknown	Hi. Moyer	Susanville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Cowboy	Jake Snyder
2. Colonel	Slim Jim
3. Slim Jim	Surprise
4. Surprise	Cowboy
5. Jake Snyder	Colonel

Time—0:25½; 0:24¼; 0:25¼; 0:25¼; 0:25.

TUESDAY, OCTOBER 4, 1887.

RACE NO. 5—TROTTING.

Purse, one thousand dollars. Free for all. Six hundred dollars to first; three hundred dollars to second; one hundred dollars to third. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Victor, by Echo; dam, by Woodburn	Geo. Doherty	Crescent Mills.
Wallace G, by Plumas; dam, Princess	P. Garrett	Chico.
Chevalier, by Brigadier; dam, by McCrackin	S. M. Roberts	Milford.
Maxwell, by Wm. Tell; dam, by Belmont.....	C. H. Lawrence	Greenville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Chevalier	Victor
2. Maxwell	Maxwell
3. Victor	Chevalier
4. Wallace G (did not appear)	

Time—2:30¾.

RACE NO. 6—RUNNING.

Purse, one hundred dollars. Free for all. Sixty dollars to first; thirty dollars to second; ten dollars to third. Three-quarter mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rock, by Bob Wooley; dam, Miss S.....	W. P. Todhunter	Sacramento.
Emma T, by Scamperdown; dam, Peggy Winters	A. C. Taylor	Gridley.
Surprise, by Langford	M. McCrimmon	Lincoln.

Walkover for Surprise.

ELEVENTH DISTRICT AGRICULTURAL ASSOCIATION.

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RACE No. 7—RUNNING.

Purse, two hundred dollars. Free for all. One hundred and twenty dollars to first; sixty dollars to second; twenty dollars to third. Mile and one half dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mayblossom, by Joe Hooker	W. P. Todhunter	Sacramento.
Menlo, by Young Prince; dam, Hattie H	M. McCrimmon	Lincoln.
Duster, by Rifleman; dam, Copperbottom	Jas. Henry	Chico.
Surprise, by Langford	M. McCrimmon	Lincoln.
Lena, by Acrobat; dam, Belmont	Wm. Lloyd	Susanville.

Position at Starting.	Position at Close.
1. Lena	Menlo
2. Duster	Lena
3. Menlo	Duster
4. Surprise (drawn)	
5. Mayblossom (did not appear)	

Time—2:57½.

RACE No. 8—TROTTING (YEARLINGS).

Purse, one hundred dollars. For district colts. Sixty dollars to first; thirty dollars to second; ten dollars to third. Three-quarter mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Duke, by Victor; dam, Nell	C. G. Rodgers	Crescent Mills.
April Fool, by Maxwell; dam, by Plumas	W. W. Blood	Greenville.
J C, by Victor	J. S. Carter	Crescent Mills.
Effie G, by Tilton Almont; dam, Queen	J. D. Byers	Janesville.
Victor B B B B, by Victor	R. W. Colson	San Francisco.

Position at Starting.	Position at Close.
1. Duke	Effie G
2. April Fool	Victor B B B B
3. Effie G	J C
4. J C	April Fool
5. Victor B B B B	Duke

Time—2:32½.

WEDNESDAY, OCTOBER 5, 1887.

RACE No. 9—TROTTING.

2:40 Class. Purse, two hundred and fifty dollars. Free for all. First money, one hundred and fifty dollars; second, seventy-five dollars; third, twenty-five dollars. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sparkle, by Prompter; dam, Starlight	Geo. Doherty	Crescent Mills.
Maxwell, by William Tell; dam, by Belmont	C. H. Lawrence	Greenville.
May Queen, by Gray Buck; dam, by Henry Belmont	J. D. Byers	Janesville.

Position at Starting.	Position at Close.
1. May Queen	May Queen
2. Maxwell	Maxwell
3. Sparkle	Sparkle

Time—2:35¾; 2:32½.

TRANSACTIONS OF THE

RACE NO. 10—RUNNING.

Purse, one hundred and fifty dollars. Free for all. First money, ninety dollars; second, forty-five dollars; third, fifteen dollars. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mollie McShane, by Pillbox; dam, Lustrass.....	M. T. Walters.....	Lakeview, Or.
Joe Marsh, by Joe Hooker; dam, by Norfolk.....	Snyder & Holland.....	Susanville.
Surprise, by Langford.....	M. McCrimmon.....	Lincoln.

Position at Starting.

1. Joe Marsh.....
2. Mollie McShane.....
3. Surprise.....

Position at Close.

- | | |
|---------------------|---|
| Mollie McShane..... | 1 |
| Surprise..... | 2 |
| Joe Marsh..... | 3 |

Time—1:52½.

RACE NO. 11—RUNNING.

Purse, one hundred and fifty dollars. Free for all. First money, ninety dollars; second, forty-five dollars; third, fifteen dollars. One mile and three quarters.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Menlo, by Young Prince; dam, Hattie H.....	M. McCrimmon.....	Lincoln.
Lena, by Acrobat; dam, by Belmont.....	Wm. Lloyd.....	Susanville.
Mollie McShane, by Pillbox.....	M. T. Walters.....	Lakeview, Or.

Position at Starting.

1. Menlo.....
2. Mollie McShane.....
3. Lena.....

Position at Close.

- | | |
|---------------------|---|
| Menlo..... | 1 |
| Mollie McShane..... | 2 |
| Lena..... | 3 |

Time—3:17½.

RACE NO. 12—GO AS YOU PLEASE.

Purse, fifty dollars. Free for all. First, thirty dollars; second, fifteen dollars; third, five dollars. Make nearest to 4:30.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Red Robin.....	J. R. Cain.....	Susanville.
Billy Collins.....	Pat. Doyle.....	Susanville.
Maggie Jumbo.....	S. M. Roberts.....	Milford.
Slickens and Pete.....	P. Halsted.....	Quincy.
Sam.....	I. R. Murray.....	Greenville.
Doc Marvin.....	Wm. Segraves.....	Susanville.
Daisy.....	Chas. Sherman.....	Susanville.

Position at Starting.

1. Maggie Jumbo.....
2. Billy Collins.....
3. Slickens and Pete.....
4. Red Robin.....
5. Sam.....
6. Doc Marvin.....
7. Daisy.....

Position at Close.

- | | |
|------------------------|---|
| Daisy..... | 1 |
| Maggie Jumbo..... | 2 |
| Sam..... | 3 |
| Slickens and Pete..... | 4 |
| Red Robin..... | 5 |
| Doc Marvin..... | 6 |
| Billy Collins..... | 7 |

Time—4:30.

THURSDAY, OCTOBER 6, 1887.

RACE No. 13—TROTTING.

2:35 Class. Purse, three hundred dollars. Free for all. First money, one hundred and eighty dollars; second, ninety dollars; third, thirty dollars. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sparkle, by Prompter; dam, by Starlight	Geo. Doherty	Crescent Mills.
Chevalier, by Brigadier	S. M. Roberts	Milford.
Maxwell, by William Tell; dam, by Belmont	C. H. Lawrence	Greenville.
May Queen, by Graybuck	J. D. Byers	Janesville.
Position at Starting.	Position at Close.	
1. Maxwell	May Queen	1 1 1
2. Sparkle	Maxwell	4 2 2
3. May Queen	Sparkle	2 3 3
4. Chevalier	Chevalier	3 4 4

Time—2:39; 2:43 $\frac{1}{2}$; 2:42 $\frac{3}{4}$.

RACE No. 14—RUNNING.

Purse, one hundred and fifty dollars. Free for all. First money, ninety dollars; second, forty-five dollars; third, fifteen dollars. One half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Surprise, by Langford	M. McCrimmon	Lincoln.
Jake Snyder, by Cottontail; dam, by Norfolk	Holland & Snyder	Susanville.
Cowboy, unknown	S. M. Roberts	Milford.
Position at Starting.	Position at Close.	
1. Jake Snyder	Surprise	1 1
2. Surprise	Jake Snyder	2 2
3. Cowboy	Cowboy	3 3

Time—0:50 $\frac{3}{4}$; 0:58 $\frac{3}{4}$.

RACE No. 15—RUNNING.

Purse, one hundred and fifty dollars. Free for all. First money, ninety dollars; second, forty-five dollars; third, fifteen dollars. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Menlo, by Young Prince	M. McCrimmon	Lincoln.
Joe Marsh, by Joe Hooker	Holland & Snyder	Susanville.
Al. Farron, by Connor	M. T. Waters	Lakeview.
Position at Starting.	Position at Close.	
1. Joe Marsh	Al. Farron	1
2. Menlo	Menlo	2
3. Al. Farron	Joe Marsh	3

Time—1:48 $\frac{1}{4}$.

RACE NO. 16—TROTTING—BUGGY RACE.

Purse, fifty dollars. For distanced horses. Owners to drive. First money, thirty dollars; second, fifteen dollars; third, five dollars. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Patchen, by Bob Ridley	Jake Fookner	Janesville.
Maud, unknown	Chas. Sherman	Susanville.
Fred, unknown	C. H. Lawrence	Greenville.
Slickens, by Plumas	P. Halstead	Quincy.
Position at Starting.		Position at Close.
1. Slickens	Slickens	2 1 1
2. Patchen	Patchen	1 3 3
3. Fred	Fred	3 2 2
4. Maud (drawn)		
Time—3:08; 3:06; 3:02½.		

FRIDAY, OCTOBER 7, 1887.

RACE NO. 17—TROTTING.

2:30 Class. Purse, three hundred and fifty dollars. Free for all. First money, two hundred and ten dollars; second, one hundred and five dollars; third, thirty-six dollars. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Victor, by Echo; dam, by Woodburn	Geo. Doherty	Crescent Mills.
Geo. Wapple, by Brigadier	C. H. Lawrence	Greenville.
Wallace G, by Plumas	P. Garrett	Chico.
Wm. Tell, by Plumas	Charles Lawrence	Greenville.
Position at Starting.		Position at Close.
1. Wm. Tell	Victor	1 1 1
2. Victor	Wm. Tell	2 2 2
3. Geo. Wapple	Geo. Wapple	dis.
4. Wallace G (did not appear)		
Time—2:40¾; 2:33¾; 2:32½.		

RACE NO. 18—RUNNING.

Purse, one thousand dollars. Free for all. First money, six hundred dollars; second, three hundred dollars; third, one hundred dollars. Two miles and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lena, by Acrobat; dam, by Belmont	Wm. Lloyd	Susanville.
Mayblossom, by Joe Hooker	W. P. Todhunter	Sacramento.
Menlo, by Young Prince	M. McCrimmon	Lincoln.
Position at Starting.		Position at Close.
1. Menlo	A walkover for Menlo.	
2. Lena (did not appear)		
3. Mayblossom (did not appear)		

RACE NO. 19—DOUBLE TEAMS.

For district horses. Purse, seventy-five dollars. First money, forty-five dollars; second, twenty-two dollars and one half; third, seven dollars and one half. Mile and repeat. Owners to drive.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
George and Fearless	H. N. Skadan	Susanville.
Maud and Fred	C. H. Lawrence	Greenville.
Jess and Patchen	Jake Forkner	Janesville.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. George and Fearless	Jess and Patchen	1 1
2. Maud and Fred	George and Fearless	2 2
3. Jess and Patchen	Maud and Fred	3 3

Time—3:37½; 3:40.

TUESDAY, OCTOBER 4, 1887.

AGREED SPECIAL RACE—TROTTING.

Purse, two hundred dollars. First money, one hundred and twenty dollars; second, sixty dollars; third, twenty dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maxwell, by Wm. Tell; dam, by Plumas	C. H. Lawrence	Greenville.
Chevalier, by Brigadier	S. M. Roberts	Milford.
Geo. Wapple, by Brigadier	Chas. Sherman	Susanville.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Maxwell	Maxwell	1 1 1
2. Geo. Wapple	Chevalier	3 3 2
3. Chevalier	Geo. Wapple	2 2 3

Time—2:44¾; 2:44; 2:45.

RACE NO. — —SPECIAL RUNNING.

Purse, two hundred and forty dollars. Free for all. One hundred and forty-four dollars to winner; second money, seventy-two dollars; third, twenty-four dollars. One mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Menlo, by Young Prince	M. McCrimmon	Lincoln.
Mollie McShane, by Pillbox	M. T. Walters	Lakeview, Or.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Menlo	Menlo	1 1
2. Mollie McShane	Mollie McShane	2 2

Time—1:49½; 1:52¾.

TRANSACTIONS

OF THE

TWELFTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Lake and Mendocino.

OFFICERS OF THE ASSOCIATION.

L. F. LONG	President.
C. C. HAMILTON	Secretary.
J. S. REED	Treasurer.

DIRECTORS.

L. F. LONG	Hopland.
F. O. TOWNSEND	Eden Valley.
L. G. SIMMONS	Lakeport.
M. KEATINGE	Lower Lake.
J. T. BURGER	Lakeport.
J. W. BOGGS	Lakeport.
E. C. BUELL	Cahto.
A. DAVIDSON	Willits.

REPORT.

UKIAH, December 24, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Twelfth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

C. C. HAMILTON, Secretary.

RECEIPTS AND EXPENDITURES.

1887.

Receipts.

Oct. 11—From membership and season tickets	\$482 00
11—From day tickets	145 50
12—From day tickets	180 50
13—From day tickets	188 00
14—From day tickets	271 50
14—From day tickets, special to school children	27 20
14—From day tickets for ball	94 00
15—From day tickets	356 95
From privileges and advertising in premium list	380 00
From entrance fees	738 00
From State warrant	1,500 00
From pavilion	120 00
	<u>\$4,483 65</u>

Expenditures.

For premiums	\$744 50
Rent of track and stock ground	400 00
For pavilion, and preparation of same	165 50
For purses	1,745 00
John Ginochio, carrying chairs	1 50
Clark Bailey, cleaning hall	2 80
Reuben Moore, Deputy Marshal	15 00
J. S. Hart, telegrams for musicians	2 05
H. Price, copying poems and essays	6 00
J. H. Hughes, calking tank	4 35
Jennie Son, use of her stable	1 50
W. D. White, ticket seller at track	15 00
James Cox, for hay	87 25
D. Tanner, gatekeeper	15 00
J. L. Pope, printing and advertising in "Press"	49 00
W. H. Hunter, printing and advertising in "Independent"	27 00
Ukiah Band, music	140 00
Harris & Brooks, teams and horses for officers	22 50
L. B. Arnold, gatekeeper	19 50
Mrs. J. J. Morrison, ribbons	16 00
C. B. Huse, printing tickets	33 25
H. A. Peabody, printing premium list, etc.	84 75
A. Marks & Co., ribbons	2 50
John Brown, doorkeeper at ball	2 00
W. H. Southard, hauling lumber, etc., for ball	3 25
William Isbell, middlings for tank	2 35
R. W. Briggs, Deputy Marshal	12 50
Joseph High, straw	3 00
Britton & Rey, lithographing diplomas	80 00
Barrett & Sherwood, for medals	30 00
W. H. Southard, hauling pipe, hay, etc.	16 75

A. O. Carpenter, calling at ball	\$5 00	
P. V. Lempke, Assistant Superintendent of pavilion	15 00	
J. Fish, for hauling straw	3 00	
Carl Purdy, Assistant Secretary	30 00	
J. H. Lando, lettering awards	7 35	
J. L. Pope, printing awards	10 00	
C. P. Smith, hauling straw	1 75	
M. Anker, hauling straw	2 00	
L. W. Jackson, hauling and sprinkling track	48 50	
F. Brunner, for pipe	12 74	
Barker & Abrams, pipe and labor	57 40	
Q. A. Overmeyer, night watchman	16 00	
John Scott, music	4 00	
J. M. Standly, Marshal	60 00	
Indians, helping with tank	2 00	
James Hunter, labor	2 00	
L. Rosenberg, badge pins	3 00	
Taylor, Taft & Viers, ribbons	4 75	
W. A. Hoffman, ribbons and books	3 85	
Incidentals, small items, stationery, etc.	30 35	
Salary of Secretary	100 00	
Deficit, Fair of 1886, Lakeport	273 60	
		<u>\$4,442 09</u>
<i>Recapitulation.</i>		
Total receipts	\$4,483 65	
Total disbursements	<u>4,442 09</u>	
Balance	\$41 56	

OPENING ADDRESS.

DELIVERED BY MRS. A. M. REED, TUESDAY EVENING, OCTOBER 11, 1887.

MR. PRESIDENT, LADIES, AND GENTLEMEN: When the Father of all completed His grand work of creation, He placed man in a garden, in the situation that must have been the most blest, best, and natural one for humanity. And that is why, I think, that around field and flower, in blossoming and fruitage, in promise and perfection, there lingers yet something of Paradise, and why among those who sow and reap, and follow the peaceful pursuits of agriculture, we find the nearest approach to independence and contentment met with upon earth. From that first garden, where sprang spontaneous to the wants of man the fairest and best of earth's productions, disobedience having banished our first parents, God gave his first sentence for their guidance through the cruel path that must now lead up to their redemption, and sent man forth to till the ground, from whence he was taken, that henceforth would yield for him not only herb, and fruit, and grain, but thorns and thistles also. The forbidden trees did, indeed, bear bitter fruit for the descendants of Adam, and century after century have they solved, in the sweat of their brows, problem after problem of labor, finding out by patient toil some of God's first thoughts for our ease and prosperity, that had been no mystery to man had not the gates of Eden closed forever behind him. Working upward out of darkness, fulfilling year after year, in tears of affliction and the sweat of toil, the plans of which we know not yet the consummation, it is not strange then that in the hearts of men there should linger yet a longing for the peace and plenty of that lost Eden, nor that many of the best minds of every age have turned to agricultural pursuits as the best means of securing domestic peace and national prosperity. Thousands of instances give testimony to the fact that the benefactors and philanthropists of almost every age and time, not only chose such mode of life for themselves, but pointed to such pursuits as the solving of many a vexed question, to hush dissensions and heal the ravages of war. Lucius Quintus Cincinnatus, an honest man, and just, and one of the best minds before the Christian era, cultivated a farm of four acres on the banks of the Tiber. He was called from his agricultural labors by a message from the Senate of Rome pronouncing him Dictator. Wiping the sweat and dust of honest toil from his brow, he donned his robe of state, and entered upon his new duties. In a very short time, having adjusted wisely and well the troubles of his countrymen, he returned to his farm, preferring a position of peaceful independence to the confusions of the affairs of government, even when he held the first place in their administration. Cato, the Censor, in his younger days, applied himself to agriculture. He wrote a book concerning country affairs, in which he did not think it beneath his dignity to give rules and receipts for the making of cakes and the preserving of fruits. Our own Washington, after serving his country as soldier, and statesman, and Chief Executive, gave up voluntarily the pursuits of ambition, and retired to his estate to live a life of peaceful seclusion, the beauty and harmony of which have not been excelled. Gladstone to-day offers, as the solving of one of the

great national problems—the Irish question—the owning and cultivating of the soil by the people. The pursuits of agriculture are time-honored, they are legitimate, they have received the sanction of Divine law, and are commended by the best human intelligence.

The art of agriculture, as it is practiced in California, is peculiar. It is not like the art developed by experience among the Anglo-Saxon races in other countries. Here in California we have had difficulty in adjusting the principles of the English common law to the irrigation question, the English common law with respect to riparian rights.

The Anglo-Irish races, from which we derive our common law, inhabited a country where there was not only abundance, but an excess of rainfall, which made it exceedingly desirable to confine the rivers to their channels. England is a low, flat island, scarcely rising one hundred feet above the level of the sea, except a few highlands in its northern portion, or on the borders between England and Scotland. Scotland is somewhat more rugged, but the mountains of Scotland are not such mountains as stand guard and sentinel upon the borders of our great State. They would not pass for respectable hills in Lake and Mendocino. Scotland is also a country of heavy rainfall. Ireland, except in its extreme southwestern part, is low and level. Its streams have sluggish currents. In fact, none of the rivers of these islands present the torrential character of the rivers of mountainous countries. The Thames, for example, is influenced by the tides seventy miles above its mouth. The problem, then, which our ancestors of the common law had to solve, was how to keep the water in its channels. The necessity of distributing it to supply the deficiencies of rainfall and the art of artificial irrigation were unknown to them. With the Latin races the experience was different. The value of irrigation has been understood in Italy and Spain for more than a thousand years. They derive that knowledge from Egypt.

Men inherit their aptitudes, and traditions long descended have their influence upon faculty, or rather upon facility, for accomplishing an object. The Anglo-Saxon race had, perhaps, its first experience of irrigation in the Salt Lake Valley. Converts to Mormonism were the first of the Anglo-Saxon races who attempted to people a country where the annual precipitation of rain was not sufficient to mature agricultural crops. With that superb faculty for organization which confers upon the English races their genius for government, systems of irrigation were formed. There was no common law within the Mormon hierarchy to obstruct the formation of a public policy strictly in accordance with public rights and public interests, and the great doctrine of the greatest good to the greatest number. The Anglo-Saxons of the Wahsatch Mountains, not only succeeded in their undertaking in a new field, but very soon surpassed in skill and the utilization of capital and labor the experiments of the Latin races.

People emigrating from one portion of the world to another necessarily carry themselves; that is to say, they carry their character, their traditions and their aptitudes. Men are intolerant of differences, hence it is that the emigration which has been passing from the east to the west during the entire history of the races of men, so far as written history testifies, has moved upon the same latitude. The northern races moved into northern latitudes, because in seeking new countries and homes they found familiar products, in the cultivation of which they were skilled by inherited aptitudes, and by the education of tradition; therefore we find the Swede and Norwegian settling in Wisconsin, Minnesota, and Dakota, the English and Irish in the middle and northern States, and the Spanish and French occupying Florida, Louisiana, Mexico, and Central and South America.

Conversation with any of the pioneer population will assure you of how little the first comers suspected the great agricultural and horticultural wealth of California—it is the constant theme of speeches at pioneer banquets and reunions—how little value was placed upon the soil: yet standing upon the shore of Suisun Bay, looking northward, up the great Sacramento Valley, in June, if the eye could reach over its length and breadth, it would sweep a field three hundred and fifty miles long, by an average of sixty miles wide, covered, with scarcely an interruption, with wheat—one broad wheat field, embracing an area of country almost equal to the State of Indiana. The pioneer will tell you that the existence of this capacity for cereal production was not suspected until many years after the first settlement of the country. It was a hidden secret only because of the power of tradition and habit upon the mind. The corn and wheat raisers of the Northern States missed the showers of June and July, which conferred growth upon the corn, ripened the wheat, and vivified the meadows of his northern home.

In short, California was not an agricultural country, if the art of agriculture, as taught us by our fathers, was to be adopted as the standard of judgment. Here conditions of soil and climate differ, and an art of agriculture must be adopted suitable or supplementary to these conditions; the seasons of seed time and harvest must be understood. The hard and unresponsive soil of the great plains of the Sacramento and San Joaquin Valleys, parched under a rainless sky and a burning sun, and swept by the hot north winds, looked wholly uninviting to eyes accustomed to the genial showers of summer rain, and the vivifying influence of clouds and storms. There were no books on the subject of agriculture to which we might appeal for standards of experience; our agriculture had to be learned entirely in the school of experiment.

Against the discouragements of doubt, and the skepticism of advice, a few began experiments in agriculture. These first experiments failed, but persistency, accidental discovery, comparison of experience, were the tutors in our school of agriculture.

Fairs that were the first markets of the world, have ever been an important adjunct to agriculture. Under such conditions as have existed, and do exist in California, an annual exhibition of the products of our soil and climate have an educational value beyond that which is known in any other country. The State, the district, and the county fairs were of incalculable value in the struggle for mastery of this new science of California agriculture. The office then performed by annual exhibitions of the product of our fields, orchards, and dairies, is educational in its character, and it is the duty of every good citizen to aid in keeping them up to the standard of their true motive. The discovery of gold in California attracted to her shores nearly all the civilized and semi-civilized races, and never was land so fair, so blest by God and nature, so despoiled, as was California by those who first visited her shores, after the discovery of gold, in the wild desire for the attainment of sudden wealth. People did not come here to make homes. The man broken in fortune, the penniless youth, the wily adventurer, all looked upon her as the El Dorado of their hopes; they lusted for her golden ore; they scarred her fair face, and tore from her bosom her most available treasure, and bore it unthankful from her shores. Thus she was ravaged of thousands upon thousands of dollars by those who had not a thought of her improvement and development, and the wealth that, if expended here, would have made her blossom as the rose, was borne away to enrich and embellish homes in less congenial climes. This desire for the attainment of sudden wealth, this gambling spirit so prevalent during

the early days of California, is still too much so for the best prosperity of the State. It brought upon us the mining stock era, that reign of financial terror from which we are but now recovering, and although some survive it the possessors of fortune and character, too many sank physical, mental, moral, and social wrecks beneath the maelstrom of its financial ruin. And although the devastation of our people, by mining stock deals, is ceasing, we have yet the wheat deals and other forms of speculative gambling, and the products of our State are handled and debased by the men who represent no legitimate form of traffic. If the vice was confined to this class, the effect upon the masses would not be so disastrous, but the example, and the temptation to acquire sudden wealth, is often too much for the ordinary producer, and turns him into the speculator.

Throughout many portions of the State there is a decided decay of the rural, and a rise of the urban spirit. From 1870 to 1880, the population of Illinois showed a very marked increase, but the statistics of employment showed the rural population to have declined, and more than the entire aggregate of increase to be due to the increase of city populations. In our own State, there is a constant tendency toward the cities. All our education tends to this direction. Our young men and young women are educated to professional employments, and as few as possible to rural pursuits. The result is seen in the dilapidated premises, misnamed "farm houses." In all the great valleys of the State, there is scarcely to be seen a comfortable, homelike house. The word "ranch," which has universal application to the farm of California, is not a misnomer. For two hundred miles in the Sacramento, and for three hundred in the San Joaquin Valley, you may travel without seeing a tree planted, to shade a country home. The cooking is done by Chinese, the wife and daughters reside in some distant city, the farmer leads a wretched, bachelor life, surrounded by brutal farm hands, who sleep in straw. The wheat crop of Northern California will bring to the coffers of the wheat growers, this year, \$40,000,000 in gold coin, but the drunkenness of the harvesting and thrashing crews, the impoverishment of the soil, the defertilization of our great wheat lands, the degradation of the laboring population, the filth and squalor in which they live who produce that wheat, the sweat and the blood, which represents its product, leave no trace upon the gold. Our great land owners have grown rich, but no great people, no great commonwealth, was ever founded upon city occupations and city life. The destruction of the agricultural spirit means the destruction of higher manhood, and higher virtues of manhood.

"Ill fares the land to hastening ills a prey,
Where wealth accumulates and men decay."

The new life and new growth of Southern California is due almost entirely to the fact, that large holdings are being broken up, that beautiful homes are succeeding to the "ranch," that ornamental grounds, with orchard trees and flowers, are taking the place of broad, uninviting, hot plains.

And with this change of condition, there is observable a change in the character of the people who offer themselves for employment in rural pursuits. The farm laborers of California have not been treated as they are in older parts of the country. They are required to furnish blankets, and sleep in straw. They are fed in moving hotels, on wheels, under a burning sun. There are no home comforts afforded here to the farm laborer. In the Eastern States, farm laborers are a part of the family: they eat at the table with their employers—they are self-respecting citizens of the republic. Every employment first attracts the character of the people willing

to engage in that employment. Make the employment of men brutal, and you must depend upon a brutalized class to fill the positions it offers, a class that will become more embruted by the character of its treatment.

Hence we are cursed in California by Chinese labor. The Chinese question will solve itself as soon as the character of the employment afforded to the young men of the Anglo-Saxon race is worthy the dignity of a man. The Chinese substitute themselves for the higher races when the employment offered involves the personal degradation of meals eaten hog-fashion, out of a trough in a wagon in the field, where the bed-chamber is found in the straw stack or in the stable with the horses. When the labor offered invites the laborer to no higher degree of personal cleanliness, and personal dignity, then self-respect will soon be lost; and when self-respect is lost the character becomes dangerous. Within a comparatively short time nearly a dozen atrocious murders have been committed in this State in lonely farm-houses. Some of these have been committed by Chinese, notably Captain Wickersham and his wife in Sonoma County, and Mrs. Billou in Colusa County; but there have been others, equally horrible and atrocious, committed by white men. Chinese labor has been well suited to conditions of industry in California, because the employments offered were congenial with their lack of all sense of cleanliness and personal dignity.

We stand to-day upon the threshold of the most prosperous era that California has yet known; it is the home-building period. We are being subjected to a peaceful invasion of thousands who seek our shores, not for our wealth of gold, but the greater wealth of things that gold cannot buy—climate, soil, and natural beauty of scenery. Over the unsightly scars upon our State's fair bosom they will plant the vine and orange grove; the scarlet of the pomegranate will blaze beneath our sun, the olive flourish, and the palm, for victory and peace. It is to our shame that with but few exceptions we have allowed strangers to take the initiative in this era of improvement. These people who are coming bring wealth, bring taste, bring the intelligence to direct labor. They will bless and beautify the land which they invade. But the sympathy of every person of thought must go out to a class that, however undeserving, belong to our State, and whose interest is endangered by their coming. The class referred to are the young people who have been born and reared in California, growing up to man and womanhood, not realizing their opportunities, nor how blest is their condition in comparison with the youth of older States: and I say to them, in all sincerity, secure a little of the land you live in before it is too late. Do not sell your glorious birthright for a mess of pottage; secure a home; keep it; work by the day, if necessary, to make your first improvements on it; build a home. It is the home-builder who is the mainstay of the nation; not the man who wrings, at the least expense, the last drop of revenue from his possessions to support his family in the city or send them to Europe; who educates his girl to adorn fashionable society and marry some titled foreign loafer, and his boy to enter some kid-glove profession, whose income is often the fruit of human misery. There is a dignity, an honor, an independence in a country home, engaged in rural and agricultural pursuits, that no profession can ever know; and the man who realizes this, who teaches his children these truths, who makes a home in the country, and adds a yearly value by improvement to his property, who pays his taxes cheerfully, whose life attests that he understands and appreciates the motives of the founders of this great commonwealth, is the true citizen.

This district is a grand one, its resources almost boundless, our crops never fail, thousands of dollars are realized yearly from the lumber, the

wool, and the hop interest, and yet its comfortable, convenient country homes can almost be counted upon one's fingers, and in this respect we are no exception. Over the length and breadth of California, even wealthy families live in dark, weather-beaten houses, unembellished by either paint or whitewash; they have lived, some of them, in the same spot for twenty years, yet scarcely a shrub or tree adorns their premises: they have not a convenient outhouse of any description, they do their washing under a tree, and boil their clothes in the pot they scald the hogs in. Almost in filth, and amid inconveniences of every description, many accumulate wealth year after year, for the land yields and increases in value in the face of bad management, and stock will increase and grow. We have glanced at the condition of the farm laborer under such circumstances—what think you of the situation of the farmer's wife, under like condition—the farmer's wife who lives on a California farm? Her fate it is to be a household drudge, until mind and soul stagnate and flesh and bone are worn out by uncongenial surroundings: and the wear and fret of a life at constant war with discomfort. She wishes a better and more convenient house—let her wait until that other piece of land is bought up. She would like a bathroom or a well arranged cool milk-house—there is no time to see about it now, the crops must be put in. She yearns for a wood-house, so that she need not step into the broiling sun, or the wet and slush of winter, every time the fire is to be replenished—wait, the crop is now ready for harvest. It has ever been woman's peculiar mission to beautify and to refine. Uncongenial surrounding, devoid of taste or convenience, are to woman a continual heart-break, therefore she longs for a few plants and trees—for in the heart of woman lingers the inherited love of flowers, such flowers as our first mother lamented when she turned from her lost Eden. If there is a woman here who reads the grand works of John Milton, turn the leaves of her "Paradise Lost" and you will find marked and underlined that lament of Eve, for "those flowers that never will in other climate grow." This inherited love of flowers, and the beautiful, is strong as life itself. Then she is growing older, she is not so well as she might be, family cares, and working for long years thwarted and hopeless of change, have broken her, she would like help once or twice a year, in the busy times, but the house is so small there is no convenience for help—she has always been in the habit of rising, sick or well, at four or six o'clock to cook for thrashers, or prepare for shearers, and ought to be used to it by this time. The farmer usually keeps a hired man the year round, with extra help at seed time and harvest. He visits San Francisco, sometimes twice a year, and on such occasions he takes a bath, and gets shaved, and so has a taste of cleanliness and comfort. Viewed with the impartial eye of justice, the condition of the Chinese laborer on the ordinary California farm is an enviable one contrasted with that of the farmer's wife. I would say to such farmers, "you are living poor to die rich:" no matter what your possessions, you are poorer than the poorest, in lack of all that makes life worth living. It is allotted to man to live but once, and then to die—a brief existence, a few greetings, and farewells, and we go hence and forever. Make an effort to have a decent home, let it be small, if necessary, but convenient.

Utilize the water that runs to waste on your land to beautify your grounds, and give the stock a place to drink. I have seen on warm summer days, on more than one "ranch," the cattle standing round, with lolling tongues, and staring eyes, with no available watering-place within reach of their thirsty lips, while within inclosures, a few rods away, water ran to waste with no benefit but as a hog wallow. Accumulate less territory, and

improve more that which you occupy. Give your wife and children a congenial dwelling place, and they will not be so anxious to mortgage the farm and move to some town or city to live. People do not find fresh air, beautiful scenery, and pure water in towns and cities; these we have in abundance in the country, and coupled with the conveniences, comforts, and decencies of life, make an earthly paradise. The facilities and customs of city life materially lighten the cares and burdens of women and children, and that is why the better part of many a country household turns to the town or the city, from the barren desert of their daily lives, and longs to journey on to some Mecca of comfort. It has been truly said, that, as individuals, "we sow an act and reap a habit, sow a habit and reap a character, sow a character and reap a destiny." That which is true of individuals is true of communities, and of nations. "The power and greatness of a people are shown rather in the comfort of the masses than in the grandeur of the few." May we, individually, help to make the destiny of California worthy of the beautiful land in which we live. I have given you a brief, faint outline of many matters of interest in our district and State, and I shall be happy, indeed, if any find in my remarks a suggestion of value, or a word of encouragement to aid them in the battle of life. With railroad facilities assured us, the future of our district is full of grand possibilities. May the District Fairs of Lake and Mendocino Counties increase in interest and value yearly; may we be able to keep them up to a standard of excellence, an encouragement to art and skill, a wondrous testimony to the capabilities of our soil and climate. Thanking you for your attention, I can do no better than to close by quoting the eloquent words of the Hon. M. M. Estee, used in his late oration at the opening of the Mechanics' Fair, and expressing belief and hope, that their exalted prophecy may be verified, when he said: "It was once said 'all roads lead to Rome,' it will be said in the future that all roads lead to California; no man will feel that he has traveled unless he has visited our fair land. The artist will find here new and original studies to inspire his genius; the poet additional themes to inflame his muse. Art will gather more striking examples for illustration. And amid all the great advantages of climate, soil, and scenery, wealth will accumulate, man will grow powerful in body, strong in mind, patriotic in sentiment, and obedient to God."

THE INDUSTRIAL ARTS AND THE APPLICATION OF KNOWLEDGE TO PRACTICAL PURPOSES.

By MISS MARY WHITE.

Just now, when the rapid land sales in California are flattering us with a deceptive appearance of unprecedented prosperity, it is necessary to inquire into the true cause and necessary condition of our economical well-being. It is said by some, that our strength lies in our trade. True, our commercial relations are large and important. San Francisco, in the near future, promises to become a second Venice. But trade can no more be the real basis of the prosperity of the State, than it can be the ultimate support of a human being.

In the final analysis, the continued economical health of the State, depends upon its power of production. That a nation cannot long continue to exist on an exclusively commercial basis, is a demonstration of history. The doubt of this principle once filled English poorhouses with paupers, and English streets with thieves. It reduced Spain to a state of chronic invalidism, and it cost Venice her life as a nation. And this, not alone because of its bearing on national finance. Large industrial interests, especially the agricultural, give stability to a nation, as industrial employment gives stability to the private character of its citizens. So it is not without wisdom, that the national government encourages interest in industrial arts, nor without prudence that our citizens respond to such encouragement by annual exhibits of local produce.

Productive labor is favorable to mental health and balance. It brings man into direct contact with the earth, air, and water—the great potential forces of nature. It supplies a want, which seems to be inherent in man's nature—the desire to produce something—to see some material embodiment of his thought and labor—in short, the instinct of creation. Hence, it is with a natural pleasure that the farmer watches the growth of his grain, or his hops; the breeder notes the increasing fineness of his stock; the architect sees his building grow in size and beauty under his hand. Such labor not only furnishes an outlet for the expression of man's constructive instinct, but it has a value as an educational power that few realize. The group of industrial arts form a vast training school, whose object is the cooperation of brain and muscle—the natural and harmonious development of the two sides of our dual existence.

Industrial labor is thus necessary to man's animal life directly, to his intellectual and spiritual life, indirectly. It does not involve immediately the highest faculties of man, nor does it form the bloom and glory of existence. But so subtly linked are all the varieties of human action, thought, and imagination, throughout the entire range of human activity, the work of the artisan to that of the artist, that no change is possible in one department of labor, without a corresponding change in others. When we examine the supposed rigid boundary, between even such seemingly far removed extremes, as the industrial and the fine arts, we find it melts away into the indefinite. Were the artist all imagination and intellect, he would

paint no pictures, write no poems, carve no statues. And were the artisan or farmer all mechanical skill, he would build no houses, weave no cloth, manage no farms. All man's powers are needed in each of the broad divisions of human labor, though combined in varying proportions. Each grade of labor is dependent on every other, and the higher the grade, the greater is that dependence.

That "the ideal must have a real to stand upon" is a principle applicable to the development of nations as well as to art. Every nation that has become famous for general culture, art, or a high status of humanity, has first had a firm basis in material prosperity. Witness Holland, Venice, and Greece. And all the prophetic groans regarding our American haste to accumulate wealth, and its supposed tendency to destroy the sensibility to better things, and to render impossible the higher forms of existence, are the short-sightedness of those who cannot understand the conditions of national growth. Even the very degree of force and ambition now thrown into mercenary pursuits, argues well for our potentiality as a people; and the energy now absorbed by growing and building and manufacturing, will one day, when the impulse of production is satisfied and sufficient wealth accumulated, be turned with equal force and result into the development of art and literature. Especially is this true of our own coast, where the natural conditions are extremely favorable to artistic life. We are right in being proud of the industrial rank of our State and country; and we should not blush when some Arnoldesque apostle of culture, as narrow in his own sphere as the narrowest farmer is in his, asks us what we have done except to plant, to dig, to build, and to manufacture. We should only be solicitous that our planting is thoughtful, our digging thorough, our building strong, and our manufacturing honest. We can then face the sneers at the youthful crudeness of our country, and assure our critics that our artistic and literary development will come in good time, and will be the richer and stronger for our long and healthy childhood.

It is this thoroughness and heartiness with which our industrial labor is performed that must make us respect ourselves as individuals and others respect us as a people. We hear much high-sounding oratory expended in proclaiming the honorableness of labor. Men who neither know what labor is, nor what honor is, have shouted this shibboleth from rostrums until the matter has become farcical. Labor, as such, is neither honorable nor dishonorable. A man's work, merely as work, never honors him; neither does it dishonor him. It is the honor of the man reflected in his work that honors him, or the weakness and dishonor of the man apparent in his work that dishonors him. Honor, like honesty, is a human attribute, and neither that nor its opposite can be anything inherent in work. So that it is only by a figure of speech that we can call any species of labor dishonorable or otherwise. It is by association merely that a kind of labor that falls into the hands of a degraded and dishonest class of persons comes to have a suggestion of degradation or dishonor.

When the sturdy old Anglo-Saxon kings planted farms and dug ditches were they the less honored for it? If all manufacturers were fearlessly honest, high minded, commanding, and agreeable in personality, would even the most fastidious consider manufacturing dishonorable? Were all farmers alert, intellectual, and refined, would they, in the eyes of any but a certain superficial class, whose opinions are not worth regarding, stand beneath the lawyer or the physician in the social scale? It is not working with the hands that is degrading, but working with the hands without the brain. Such work is always servile, and generally poor in quality. There are, undoubtedly, tendencies in certain kinds of labor to induce intellectual

inaction. But the strong man is not corrupted by tendencies. He overcomes them and his work is the better for the struggle. We all know of farmers who put thought and intelligence into every detail of their work. We have seen some who displayed in the management of their farms an executive ability and a genius for organization that would have done credit to a Wallenstein. Do we respect such men less than those of the learned professions among our acquaintances? They are broad, alive, and interesting outside of their business; because they are alert, intelligent, and interested in it. The soil in which they delve has no power to dishonor them. Mere matter is dead and inert, and has no quality of itself. It becomes in some sense human when it passes through man's hands in its alterations. So that, if we are to call labor honorable, it is so only in the proportion in which human thought enters into and becomes apparent in it.

There is, however, a noticeable tendency to separate thought from work, to relegate to distinct realms two phases which are naturally the close complements of each other. Too many of our workers act without thinking, and too many of our thinkers think without acting, thus bringing the reproach of degradation upon the one department of labor, and that of inefficiency and unpracticalness upon the other. We have, broadly, two great classes of laborers—the mind workers and the hand workers—two classes which appear to be much more distinct than they really are, and which are in fact much more distinct than they should be; and this, partly because of the extreme to which the civilized world is now carrying the principle of the division of labor, partly because of a mistaken view regarding the relative degrees of honor attaching to the respective grades of labor. For the benefit of both classes of workers, and for the best results in each department of work, there should be a closer affiliation between them; and this not by a mere coalition of classes, but by a mutual participation in a common labor. The mind worker should have, to a certain extent, both knowledge and practice in industrial labor; and the hand worker should know and apply intelligently the theories relating to his occupation. And not only this, he should go further than the mere mechanical application of the commoner principles of his occupation. He should meet the mind worker half way by bringing all the insight and constructive power of an active intellect to bear upon his occupation. A certain coördination and coöperation between the theorist and the man of practice is necessary to the highest development of their respective departments. There are problems of practice whose solution could never be reached by mere practice, and problems of theory that could never be reached by unaided thought. There is no occupation so simple and mechanical that cannot be raised to a higher degree of efficiency by the application of thought, and no intellectual truth so far removed from the practical that it is independent of practice for its suggestion and confirmation.

This artificial separation of thought work from hand work is injurious alike to the worker and to the work. Everywhere there is poor work, and consequent annoyance between employer and employed, because the laborer insists on believing—to his own degradation and to that of his work—that he is paid for the use of his strength and mechanical skill only, and not for his thought in their exertion as well. It is a common complaint that the master workman, farmer, or manufacturer is obliged to furnish his employés with the brains requisite for the satisfactory execution of their work. When the employé in a given department of labor becomes better informed and fuller of ideas regarding his own work than his employer, his labor loses its servility; he becomes himself a master, respects himself, and compels the respect of others.

It is then, by the intimate union of theory and practice, that the industrial arts are to be elevated and true industrial progress to be made. All the great inventions which have so greatly facilitated the progress of industry have been the productions of theoretical science, the insights of theoretical thinkers—instance, the steam engine and the cotton loom. It is to chemical science that we owe the perfect dyeing of our clothes, and to mechanical science their weaving. To scientific ingenuity is due the wool-comber and the cotton-gin. It is the knowledge of mathematical science that has led to the improved construction of our houses, our carriages, and our ships. It was the knowledge of chemistry that suggested the analysis of soils, and led to the discovery of the principle of rotation of crops. It is also science that has suggested improved ways of cultivation, and that has brought our agricultural and manufacturing machinery to their present high standard of efficiency. It is the engineering skill of college-trained men that has reclaimed the waste lands on the banks of the Mississippi and on the coasts of Holland. And it was the scholarly De Lesseps who conceived the immensely practical plan of cutting the Suez Canal, and later, the present work at the Isthmus of Panama. It is science that is now grappling with the problem of blights and injurious insects, and it should be a matter of pride for our State that of all the attempts made by the scientists of all countries for the successful treatment of phylloxera—for which France offers a prize of \$1,000,000—the nearest approach to success was recently made by a graduate of our own State University.

But all this is only the *direct* application of knowledge to practice. There is an *indirect* application which is not less important—only less obvious. It is the conversion of well assimilated knowledge into personal force. It is that education which gives the quick eye, the keen insight, the ready action, the general alertness, and decisiveness of attitude of the entire individual. It was this thought that Bacon had in mind when he said that a young man could plow closer to a stump without hitting it, for having had a college education. And, other things being equal, the statement is true, because of the general accuracy and activity of mind induced by scientific thought.

In both direct and indirect ways, so strong is the dependence of industrial progress upon science, that the development of the industrial arts cannot precede the growth of scientific education, but must proceed hand in hand with it. It is the realization of the need for scientific training in those engaged in industrial pursuits that is giving rise to the rapid increase of industrial schools, in our country and elsewhere. And only when that need is generally recognized and acted upon will the arts of industry, on our coast and throughout the world, fulfill their highest ideal of progress.

ODE TO PROGRESS.

BY ANNA MORRISON REED.

Genius of this grand century, and guardian of the free,
Who can a tribute worthily bring from our hearts to thee?
When 'neath the Star of Bethlehem angels sang that blessed morn:
"Peace on earth, good will to all men," Progress thou wert also born.
The ages past had never known thee, for man unjust oppressed
His fellow man; who, suffering, saw might as right confessed.

Ask Egypt's hordes, who toiled as helpless slaves
To build her kings imperishable graves,
Or Grecian art, that on each heathen fane
Left us the dower of some immortal name,
Or Rome's imperial grandeur crumbling down,
If it was Progress marked their great renown.
No, since the world and all its works began,
Have art and science been the slaves of man,
Degraded oft, ignoble scopes to fill
To suit the vagaries of the human will.
So Freedom's smile o'er superstition's horde
Accomplished more than power of fire and sword,
While Christian liberty, o'er land and sea,
Enlightens all, and makes the poorest free;
And things that were but dreams to Greece and Rome,
With us to grand realities have grown.
A homeless child so touched the human soul
He made the world akin—one wondrous whole;
His story echoes down the aisles of time
In every language told by tongues sublime.
Nor will it cease till every land has heard
The precious promise of His sacred word,
That truth and justice shall prevail alone—
Where they are not, Progress, thou art not known.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHbred HORSES.			
Mare, three years old	W. J. Hildreth	Ukiah	\$15 00
Stallion, three years old	John Wathen	Covelo	\$15 00
Mare, three years old (special)	M. C. Briggs	Potter Valley	\$15 00
One year old	G. B. Nichols	Lakeport	\$3 00
CLASS II—GRADED HORSES.			
Stallion, three years old	G. B. Nichols	Lakeport	\$10 00
Mare, three years old	L. H. Gruell	Lakeport	\$10 00
Colt, under one year old	J. D. Curtis	Ukiah	\$2 00
CLASS III—ROADSTERS.			
Mare, three years old	L. H. Gruell	Lakeport	\$8 00
Mare, three years old	W. A. Hagans	Ukiah	\$5 00
Two years old	H. A. Peabody	Ukiah	\$6 00
CLASS IV—CARRIAGE HORSES.			
Span	Wm. Isbell	Ukiah	\$10 00
Buggy horse	J. D. Curtis	Ukiah	\$10 00
CLASS V—FAMILIES.			
Thoroughbred mare and five colts	W. J. Hildreth	Ukiah	\$8 00
Graded stallion and five colts	W. J. Hildreth	Ukiah	\$6 00
Graded mare and three colts	Thos. Charlton	Ukiah	\$6 00
Draft mare and three colts	T. J. Fine	Ukiah	\$8 00
CLASS VI—HORSES OF ALL WORK.			
Best three years old	D. H. Gruell	Lakeport	\$10 00
Best two years old	R. F. Hayworth	Ukiah	\$5 00
Best yearling	Samuel Neil	Potter Valley	\$3 00
CLASS VII—DRAFT HORSES.			
Best stallion	A. Switzer	Westport	\$10 00
Second best stallion	J. D. Ball	Booneville	\$6 00
Best gelding	F. M. Burroughs	Lakeport	\$10 00
Best mare	L. F. Long, Jr.	Hopland	\$10 00
Best gelding, two years old	G. B. Nichols	Lakeport	\$5 00
Best mare, two years old	T. J. Fine	Ukiah	\$5 00
Best gelding, one year old	F. M. Burroughs	Lakeport	\$5 00
Best mare, one year old	J. R. Johnson	Ukiah	\$5 00
Best suckling horse colt	Thos. Parsons	Hopland	\$3 00
Best suckling mare colt	Geo. McCowen	Ukiah	\$3 00
Best span	J. M. Luce	Ukiah	\$3 00

SECOND DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—CATTLE—JERSEYS.			
Best bull	J. R. Johnson.....	Ukiah	\$10 00
Best cow	T. J. Fine.....	Ukiah	\$8 00
Best heifer	J. R. Johnson.....	Ukiah	\$8 00
CLASS II—HOLSTEINS.			
Best bull	Jno. Mewhinney.....	Potter Valley.....	\$10 00
Best cow	Jno. Mewhinney.....	Potter Valley.....	\$7 00
Best bull, yearling	Jno. Mewhinney.....	Potter Valley.....	\$6 00
Best heifer calf	Jno. Mewhinney.....	Potter Valley.....	\$4 00
CLASS III—GRADED.			
Best bull	A. B. Montgomery.....	Ukiah	\$6 00
Best heifer	Jno. Mewhinney.....	Potter Valley.....	\$2 00
CLASS IV—SWEEPSTAKES.			
Best bull	Jno. Mewhinney.....	Potter Valley.....	\$10 00
Best cow	Jno. Mewhinney.....	Potter Valley.....	\$10 00

THIRD DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—ANGORA GOATS.			
Best buck	Jno. F. Todd.....	Ukiah	\$4 00
Best three does	Jno. F. Todd.....	Ukiah	\$4 00
Best pen of goats	Jno. F. Todd.....	Ukiah	\$5 00

FOURTH DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—SWINE—BERKSHIRE.			
Best boar	W. J. Hildreth.....	Ukiah	\$4 00

FIFTH DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—POULTRY.			
Best and largest exhibit	Mrs. J. L. Burger.....	Ukiah	\$8 00
Best pair Partridge Cochins	Mrs. J. L. Burger.....	Ukiah	\$1 00
Best pair Silver-Spangled Hamburgs	Mrs. J. R. Johnson.....	Ukiah	\$1 00

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—AGRICULTURAL PRODUCTS.			
Best dried hops	A. V. Stanfield	Ukiah	\$1 00
Best potatoes	P. Morris	Ukiah	\$1 00
Best sweet potatoes	M. V. Cleveland	Ukiah	\$1 00
Best mangelwurzels	J. R. Johnson	Ukiah	\$1 00
Best squash	G. W. Busch	Potter Valley	\$1 00
Best corn, cabbage, turnips	A. Garavanti	Ukiah	\$3 00
Best apples, peaches, pears, plums, and display	G. W. Scudamore	Lakeport	\$28 00
Best quinces	Geo. McCowen	Ukiah	\$3 00
Best almonds	Pearl Fine	Ukiah	\$2 00
CLASS II—FLOWERS, ETC.			
Best collection hardy plants	Mrs. C. P. Smith	Ukiah	\$5 00
Best cut flowers	Mrs. J. M. Marion	Ukiah	\$3 00
Best preserved and paper flowers	Sacred Heart Convent	Ukiah	\$5 50
Best bulbs	Carl Purdy	Ukiah	\$1 00
CLASS III—DAIRY PRODUCE.			
Best cheese	D. W. Rupe	Little Lake	\$5 00
Best butter	Mrs. A. O. Carpenter	Ukiah	\$3 00
Second best butter	Mrs. J. R. Johnson	Ukiah	\$3 00
CLASS IV.			
Best collection fruits and jellies	Mrs. S. J. Chalfant	Ukiah	\$6 00
Second best bread	Mrs. S. J. Chalfant	Ukiah	\$1 00
Second best fruits and jellies	Sallie Peabody	Ukiah	\$2 00
Best six loaves bread. Special award by R. McGaw	Mary Schlitz	Ukiah	Silv. tray.
Bread and cake—divided	Mary Schlitz	Ukiah	\$3 00
Bread and cake—divided	Rosie Reed	Ukiah	\$3 00
Best single loaf bread	Ethel Cooper	Ukiah	\$3 00
CLASS V.			
Best exhibit of wines	L. Peters & Co.	Ukiah	\$5 00

SEVENTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—MECHANICAL PRODUCTS.			
Best carriage	Thos. Charlton	Ukiah	\$5 00
Best exhibit of leather	G. W. Gibson & Co.	Ukiah	\$10 00
Best exhibit of saddlery	G. W. Gibson & Co.	Ukiah	\$3 00
Best exhibit of harness	C. H. Whitten	Ukiah	\$13 00
Best hardware, stoves, tools	F. Brunner	Ukiah	\$12 00
Best combination hoe and spade	W. Isbell	Ukiah	\$5 00

EIGHTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Best crochet work.....	Pearl Fine.....	Ukiah.....	\$2 00
Best lace work.....	Mrs. Mark Howard.....	Ukiah.....	\$2 00
Best point lace.....	Mrs. T. L. Carothers.....	Ukiah.....	\$2 00
Swan chenille.....	Mrs. T. L. Carothers.....	Ukiah.....	\$2 00
Table cover.....	Mrs. T. T. Carothers.....	Ukiah.....	\$2 00
Sofa cushion.....	Mrs. T. L. Carothers.....	Ukiah.....	\$2 00
Net work.....	Miss A. Treadway.....	Ukiah.....	\$2 00
Zephyr work.....	Miss A. Treadway.....	Ukiah.....	\$1 50
Table cover.....	Miss A. Treadway.....	Ukiah.....	\$2 50
Kensington work.....	Sacred Heart Con- vent.....	Ukiah.....	\$2 50
Wall banner.....	Sacred Heart Con- vent.....	Ukiah.....	\$2 50
Shetland floss.....	Mrs. Dr. S. J. Reid.....	Ukiah.....	\$1 50
Lambrequin.....	Mrs. M. Hoffman.....	Ukiah.....	\$2 50
Silk embroidery.....	Mrs. M. Hoffman.....	Ukiah.....	\$3 00
Wall banner.....	Mrs. W. A. Hagans.....	Ukiah.....	\$1 50
Carriage afghan.....	Mrs. W. A. Hagans.....	Ukiah.....	\$3 00
Feather work.....	Mrs. R. Moore.....	Ukiah.....	\$1 00
Robe.....	Mrs. A. C. Berlin.....	Hopland.....	\$1 50
Table scarf.....	Mrs. A. C. Berlin.....	Hopland.....	\$2 50
Dress.....	Mrs. A. C. Berlin.....	Hopland.....	\$3 00
Scent bag and card receiver.....	Miss Gracie Reid.....	Ukiah.....	\$1 00
Zephyr flowers.....	Miss Luella Henry.....	Hopland.....	\$2 00
Zephyr work.....	Miss B. L. Schmidt.....	Ukiah.....	\$1 00
Pressed work.....	Miss J. J. Martin.....	Ukiah.....	\$2 00
Sea mosses.....	Miss L. J. Reeves.....	Ukiah.....	\$1 50
Sea shells.....	Mrs. M. E. McCowen.....	Ukiah.....	\$1 50
Screens.....	Mrs. M. E. McCowen.....	Ukiah.....	\$1 00
Tapestry.....	Miss N. Cummings.....	Ukiah.....	\$1 50
Rug.....	Mrs. S. Orr.....	Ukiah.....	\$1 50
Kindergarten work.....	Miss L. J. Reeves.....	Ukiah.....	\$2 00
Taxidermy.....	Mrs. Grace Davis.....	Ukiah.....	\$5 00
Lace work.....	Mrs. Grace Davis.....	Ukiah.....	\$2 00
Honey.....	J. H. Schefer.....	Ukiah.....	\$10 00
Pillow shams.....	Mrs. L. D. Mon- tagne.....	Covelo.....	\$5 00
Worsted crazy quilt.....	Mrs. L. D. Mon- tagne.....	Covelo.....	\$3 00
Etched splasher.....	Mrs. E. Melindy.....	Ukiah.....	\$3 00
Crazy cushion.....	Mrs. E. Melindy.....	Ukiah.....	\$3 00
Kensington work.....	Miss M. Hildreth.....	Ukiah.....	\$2 50
Infants' clothes.....	Mrs. J. R. Johnson.....	Ukiah.....	\$2 50
Dress.....	Mrs. J. Walverton.....	Ukiah.....	\$3 00
Dress.....	Miss L. Cleveland.....	Ukiah.....	\$3 00
Ladies' underwear.....	Mrs. R. McGarvey.....	Ukiah.....	\$3 00
Quilt.....	Mrs. W. Isbell.....	Ukiah.....	\$2 00
Silk quilt.....	Mrs. A. Carner.....	Potter Valley.....	\$2 50

NINTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—ART.			
Best local landscape	Miss L. J. Reeves ..	Ukiah	\$5 00
Second best local landscape	Mrs. Grace Davis ..	Ukiah	\$3 00
Best collection of paintings	Mrs. Grace Davis ..	Ukiah	\$10 00
Best copy, oil	Mrs. M. Hoffman ..	Ukiah	\$3 00
Best painted mirror	Mrs. M. Hoffman ..	Ukiah	\$2 00
Best crayon drawing	Mrs. Grace Davis ..	Ukiah	\$2 50
Best pen and ink drawing	Mrs. Grace Davis ..	Ukiah	\$2 50
Best pencil drawing	Miss A. Heacock ..	Ukiah	\$2 50
Best flower painting	Miss L. J. Reeves ..	Ukiah	\$3 00
Best painting on textile fabrics	Sacred Heart Con- vent	Ukiah	\$3 00
Best painting on table	Sacred Heart Con- vent	Ukiah	\$3 00
Best portrait painting	Miss Grace Davis ..	Ukiah	\$7 50
Best class in painting	Miss Grace Davis ..	Ukiah	\$5 00
Best life-size setter dog (special)	Miss A. Davidson ..	Ukiah	\$10 00
JUVENILE.			
Pencil work	Charles Chalfant ..	Ukiah	\$1 00
Winter scene	Nellie Scott	Ukiah	\$2 00
Oil painting on plush	Gracie Reed	Ukiah	\$1 00
Oil painting on tray	Gracie Reed	Ukiah	\$2 00
Pencil work	Lizzie Parsons	Ukiah	\$1 50
Oil painting	Rosie Reed	Ukiah	\$1 50
Map drawing	Mamie Ambrose ..	Ukiah	\$2 50
School work (diploma and frame)	Ukiah Pub. School ..	Ukiah	\$50 00
School work	Ukiah Commercial College	Ukiah	\$10 00
Best display of printing	H. A. Peabody	Ukiah	Diploma.
Best porcelain painting (special)	Mrs. M. Hoffman ..	Ukiah	\$5 00
Second best painting on textile	Mrs. M. E. McCowen ..	Ukiah	\$2 00
MISCELLANEOUS.			
Best redwood display	John W. Barrett ..	Fort Bragg	\$10 00
Best sewing machine (White), diploma and frame	S. J. Chalfant	Ukiah	\$25 00
Second best sewing machine (Domestic), diploma and frame	W. J. Heffelfinger ..	Santa Rosa	\$10 00
Antique tiles	Mrs. M. E. McCowen ..	Ukiah	\$1 00
Coal	B. B. Fox	Ukiah	\$1 00
Bituminous rock	B. B. Fox	Ukiah	\$1 50
Best essay	Mrs. Mary White ..	Ukiah	Gold med.
Best poem	Mrs. Anna M. Reed ..	Ukiah	Gold med.

SPEED PROGRAMME.

TUESDAY, OCTOBER 11, 1887.

RACE No. 1—RUNNING.

Saddle race. Three or more to enter, and two or more to start. First horse, fifty dollars; second horse, twenty-five dollars. Half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rambler	C. M. Day	Potter Valley.
Black Ned	Henry Barker	Sanel.
Billy the Kid	Fred. Burger	Lakeport.
Snip	John Wathen	Covelo.
Jennie Victress	Frank Burke	Ukiah.
Toby	Thos. Givens	Sanel.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Black Ned	Billy the Kid
2. Snip	Jennie Victress
3. Billy the Kid	Snip
4. Rambler	Black Ned
5. Jennie Victress	Rambler
6. Toby	Toby

Time—0:55.

RACE No. 2—RUNNING.

Purse, two hundred dollars. Second horse, fifty dollars. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Albert C	Alex. Perry	Ukiah.
Jennie Victress	Frank Burke	Ukiah.
Cootie	W. A. Hagans	Ukiah.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Albert C	Albert C
2. Jennie Victress	Jennie Victress
3. Cootie	Cootie

Time—1:57.

WEDNESDAY, OCTOBER 12, 1887.

RACE No. 3—RUNNING.

Purse, one hundred and twenty-five dollars. Free for all. Second horse, twenty-five dollars. Three quarters of a mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Alfred C.....	Alex. Perry.....	Ukiah.
Fanny Parnell.....	D. McGovern.....	Petaluma.
Gypsy Queen.....	W. Moore.....	Petaluma.
Rhodes.....	John Wathen.....	Covelo.

Position at Starting.

1. Alfred C.....
2. Fanny Parnell.....
3. Gypsy Queen.....
4. Rhodes (drawn).....

Position at Close.

- | | |
|--------------------|---|
| Fanny Parnell..... | 1 |
| Alfred C..... | 2 |
| Gypsy Queen..... | 3 |

Time—1:24 $\frac{3}{4}$.

RACE No. 4—TROTTING.

Purse, one hundred and fifty dollars. Three or more to enter, two or more to start. Second horse, fifty dollars. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Surdell.....	George Ellis.....	Lakeport.
Secretary.....	L. H. Boggs.....	Lakeport.
Q B.....	W. A. Inman.....	Lakeport.
Maud B.....	A. P. Church.....	Lakeport.

Position at Starting.

1. Q B.....
2. Maud B.....
3. Secretary.....
4. Surdell.....

Position at Close.

- | | | | |
|----------------|------|---|---|
| Surdell..... | 2 | 1 | 1 |
| Q B..... | 1 | 2 | 2 |
| Maud B..... | dis. | | |
| Secretary..... | dis. | | |

Time—2:53; 2:53; 2:54.

RACE No. — —RUNNING.

Between heats. A quarter mile dash for purse of thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dick Turpin.....	Thos. Charlton.....	Ukiah.
Toby.....	Thos. Givens.....	Sanel.
Black Ned.....	Henry Barker.....	Sanel.

Position at Starting.

1. Dick Turpin.....
2. Toby.....
3. Black Ned.....

Position at Close.

- | | |
|------------------|---|
| Dick Turpin..... | 1 |
| Black Ned..... | 2 |
| Toby..... | 3 |

Time—0:26 $\frac{1}{2}$.

THURSDAY, OCTOBER 13, 1887.

RACE No. 5—TROTTING.

Purse, one hundred and fifty dollars; second horse, thirty dollars. Free for all. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Kitty M	D. McGovern	Petaluma.
Fred	Wm. Harris	Ukiah.
Sam Tilden	W. A. Hagans	Ukiah.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Fred	Fred
2. Sam Tilden	Kitty M
3. Kitty M	Sam Tilden

Time—2:45.

RACE No. 6—RUNNING.

Purse, ninety dollars; second horse, thirty dollars. Three or more to enter; two or more to start. Free for all. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Tilly B	P. E. Smith	Lakeport.
Rosewood	L. H. Gruell	Lakeport.
Fanny Parnell	D. McGovern	Petaluma.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Rosewood	Fanny Parnell
2. Tilly B	Rosewood
3. Fanny Parnell	Tilly B (withdrawn)

Time—0:51; 0:52; 0:53; 0:54.

FRIDAY, OCTOBER 14, 1887.

RACE No. 7—TROTTING.

Purse, one hundred and fifty dollars; second horse, fifty dollars. Three-year olds. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Babe	Thos. Charlton	Ukiah.
Don	A. P. Church	Lakeport.
Elmo	Wm. Harris	Ukiah.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Don	Babe
2. Elmo	Don
3. Babe	Elmo

Time—3:26½.

RACE No. 8—RUNNING.

Purse, one hundred and fifty dollars; second horse, fifty dollars. Half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ace Full	John Wathen	Covelo.
Dick Turpin	Thos. Charlton	Ukiah.
Floursack	W. R. Thomas	Ukiah.
Jennie Victress	Frank Burke	Ukiah.
Rambler	Charles Day	Potter Valley.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Floursack	Ace Full
2. Ace Full	Dick Turpin
3. Dick Turpin	Floursack
(Others withdrawn.)	3 dr.

Time—0:51½; 0:54.

EXTRA RACE.

Purse, twenty dollars. Carriage race. Single dash, one mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bill and Tom	Wm. Isbell	Ukiah.
Rose and May	H. T. Hatch	Sherwood Valley.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Rose and May	Rose and May
2. Bill and Tom	Bill and Tom

Time—3:35.

SATURDAY, OCTOBER 15, 1887.

RACE No. 9—RUNNING.

Purse, two hundred dollars. Free for all. Second horse, fifty dollars. Two or more to enter; two or more to start. Half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rosewood	L. H. Gruell	Lakeport.
Fanny Parnell	D. McGovern	Petaluma.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Fanny Parnell	Fanny Parnell
2. Rosewood	Rosewood

Time—0:52; 0:52.

RACE No. 10—RUNNING.

Purse, one hundred and fifty dollars. Free for all. Second horse, fifty dollars. Single dash, one mile and one eighth.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Frank Rhodes	John Wathen	Covelo.
Alfred C	Alex. Perry	Ukiah.
Cootie	W. A. Hagans	Ukiah.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Frank Rhodes	Alfred C
2. Cootie	Cootie
3. Alfred C	Frank Rhodes

Time—2:14.

RACE No. 11—TROTTING.

Purse, one hundred and twenty-five dollars. Free for all. Second money, twenty-five dollars. Mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred	Wm. Harris	Ukiah.
Surdell	George Ellis	Lakeport.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Fred	Fred
2. Surdell	Surdell

Time—2:50; 2:42.

TRANSACTIONS

OF THE

THIRTEENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Sacramento, Sutter, Yolo, and Yuba.

OFFICERS OF THE ASSOCIATION.

D. E. KNIGHT.....	President.
T. J. SHERWOOD	Secretary.
J. J. SHAFFER.....	Treasurer.

DIRECTORS.

J. W. WILSON	Sacramento.
JAMES LITTLEJOHN.....	Yuba City.
C. F. REED.....	Grafton, Yolo County.
D. E. KNIGHT.....	Marysville.
N. D. COOMBS.....	Marysville.
C. A. GLIDDEN	Marysville.
M. MARCUSE	Marysville.
A. D. CUTTS.....	Marysville.

REPORT.

December 30, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Thirteenth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

T. J. SHERWOOD, Secretary.

RECEIPTS AND EXPENDITURES.

1887.	<i>Receipts.</i>	
Jan. 1—Cash on hand		\$760 66
Aug. 31—Subscriptions		1,121 50
Sept. 3—Entrees to races		1,220 00
3—Tickets sold		1,828 20
3—Per cent on pools		607 85
3—Wheel permit		163 00
3—Wagon tickets and quarter badges		91 00
3—Advertising in premium list		55 00
3—Donated premiums		81 50
4—Foreits in races		65 00
6—Sale of cloth		6 00
6—State appropriation		1,833 61
		<u>\$7,833 32</u>
1887.	<i>Expenditures.</i>	
Sept. 3—Labor for fair, 1887		\$471 50
Hay, sprinkling, etc.		632 15
Rent, light, music, etc.		810 35
Printing and advertising		430 50
Premiums at fair grounds		668 50
Premiums at pavilion		1,165 11
Purses paid for races		3,300 00
Balance on hand		355 21
		<u>\$7,833 32</u>

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—THOROUGHBRED HORSES.			
Bay stallion, six years old, Monicas.....	J. B. Ramsey	Meridian	\$25 00
Bay mare, six years old, Lady Cleveland.....	J. B. Ramsey	Meridian	\$20 00
CLASS II—GRADED HORSES.			
Bright bay stallion, Gus Payne	J. B. Ramsey	Meridian	\$20 00
Brown stallion and family of five colts, Alcantara	J. B. Ramsey	Meridian	\$15 00
Bay stallion, one year old, Alhambra.....	P. McCune.....	Yuba City	\$10 00
Sorrel stallion, two years old, Ben Ster- ling	A. C. Gray	Marysville	\$15 00
Roan stallion, one year old, Dick	John Lopez	Marysville	\$5 00
Black mare, one year old, May O	F. E. Griffiths	Marysville	\$15 00
Black mare, one year old, May	Polk Coats	Yuba City	\$5 00
CLASS III—HORSES OF ALL WORK.			
Bay stallion, Morgan	Ira Wood	Meridian	\$7 50
Dark brown stallion, Wake Up Jake	J. B. Ramsey	Meridian	\$15 00
Bay mare, Nell	S. E. Inlow	Marysville	\$10 00
Bay mare, Bessie	A. C. Gray	Marysville	\$5 00
Brown mare, Mollie	Frank Grant	Marysville	\$10 00
CLASS IV—DRAFT HORSES.			
Black stallion, two years old, Boneyville.....	John Seaward	Wheatland	\$10 00
Black stallion, eight years old, Luneville	John Seaward	Wheatland	\$15 00
Iron-gray stallion, three years old, Nor- mandy	S. Grant	Marysville	\$7 50
Black stallion, two years old, William C.....	N. D. Coombs	Marysville	\$5 00
Chestnut mare, seven years old, Magnolia	B. B. Boulware	Marysville	\$10 00
Bay mare, three years old, Young Nell	C. Matthews	Marysville	\$10 00
Bay mare, two years old, Maggie	John Seaward	Wheatland	\$5 00
CLASS V—ROADSTERS.			
Bay stallion, Prompter	Henry Klemp	Pleasant Grove	\$5 00
Black gelding, three years old, Billy	William Doty	Meridian	\$10 00
Brown stallion, Alcantara	J. B. Ramsey	Meridian	\$15 00
Brown stallion, three years old, Alpha	W. Gardner	Marysville	\$7 50
Bay mare, Knighthood	Frank Grant	Marysville	\$10 00
Bay mare, three years old, Madia	W. Gardner	Marysville	\$5 00
CLASS VI—CARRIAGE HORSES.			
Black horses, team, Frank and Billy	M. V. Nelson	Marysville	\$10 00
CLASS VIII—SADDLE HORSES.			
Brown gelding	C. A. Glidden	Marysville	\$5 00
Brown gelding	S. E. Inlow	Marysville	\$2 50
CLASS IX—COLTS.			
Mare colt, one year old, Flora	Ira Wood	Meridian	\$8 00
Horse colt, suckling	B. B. Boulware	Marysville	\$5 00
Sorrel mare colt	J. J. McGrath	Marysville	\$5 00
Bay horse colt	John Seaward	Wheatland	\$5 00
Bay suckling colt	J. B. Ramsey	Meridian	\$5 00
Black mare colt	Ira Wood	Meridian	\$4 00
Black horse colt	Geo. Ohleyer, Jr.	Yuba City	\$2 50
Black horse colt	John Seaward	Wheatland	\$2 50
Black suckling colt	S. E. Inlow	Marysville	\$2 50
Sorrel colt, one year old	Robert Davis	Yuba City	\$5 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Gray mare colt, one year old.....	N. D. Coombs.....	Marysville.....	\$4 00
Brown mare colt, one year old.....	Frank Grant.....	Marysville.....	\$2 50
CLASS X—SWEEPSTAKES.			
Brown stallion, Alcantara.....	J. B. Ramsey.....	Meridian.....	\$25 00
Bay mare, Young Nell.....	C. Matthews.....	Marysville.....	\$15 00
CLASS XI—JACKS, JENNIES, AND MULES.			
Black jack, four years old, Romeo.....	E. H. Gould.....	Honcut.....	\$7 50
Black jack, two years old, Romeo, Jr.....	E. H. Gould.....	Honcut.....	\$2 50
Black jenny, eight years old, Rose.....	E. H. Gould.....	Honcut.....	\$5 00
Sorrel mule, one year old, Gyp.....	Fred. Ohleyer.....	Yuba City.....	\$5 00
Span of draft mules.....	J. B. Ramsey.....	Meridian.....	\$10 00
CLASS XIII—JERSEY CATTLE.			
Red bull, three years old, Arthur.....	V. C. Putnam.....	Marysville.....	\$15 00
Black bull, two years old, Dexter.....	V. C. Putnam.....	Marysville.....	\$8 00
Red cow, three years old, Rose.....	C. Matthews.....	Marysville.....	\$12 00
CLASS XVIII—HOLSTEIN CATTLE.			
Black and white bull, three years old, Michael Angelo.....	R. C. Kells.....	Yuba City.....	\$15 00
Black bull, one year old, Udna Prince.....	R. C. Kells.....	Yuba City.....	\$5 00
Bull calf, Milo.....	R. C. Kells.....	Yuba City.....	\$3 00
Bull calf, Sutter Boy.....	R. C. Kells.....	Yuba City.....	\$2 00
Black and white cow, three years old, Lady Kooman.....	R. C. Kells.....	Yuba City.....	\$12 00
Black and white calf, one year old, Olivett.....	R. C. Kells.....	Yuba City.....	\$5 00
Heifer calf, Gertie.....	R. C. Kells.....	Yuba City.....	\$3 00
CLASS XIX—HOLSTEIN HERDS.			
Ten Holsteins.....	R. C. Kells.....	Yuba City.....	Spec.men.
CLASS XX—GRADED CATTLE.			
Black bull.....	John Kimball.....	Yuba City.....	\$10 00
Calf, three months old.....	L. Coombs.....	Marysville.....	\$3 00
Heifer calf.....	R. C. Kells.....	Yuba City.....	\$3 50
CLASS XXVI—BERKSHIRE SWINE.			
Brood sow.....	James Farrell.....	Marysville.....	\$5 00
Pig, six months old.....	James Farrell.....	Marysville.....	\$4 00
Boar, two years old.....	C. Matthews.....	Marysville.....	\$4 00
Pair pigs.....	C. Matthews.....	Marysville.....	\$3 00
CLASS XXVIII—POLAND-CHINA HOGS.			
Sow.....	R. C. Kells.....	Yuba City.....	\$5 00
Boar.....	R. C. Kells.....	Yuba City.....	\$4 00
SPECIAL CLASS—POLL-ANGUS CATTLE.			
Bull, two years old.....	John Kimball.....	Yuba City.....	\$8 00
Bull calf.....	John Kimball.....	Yuba City.....	\$3 00
Cow, three years old.....	G. W. Peacock.....	Marysville.....	\$12 00
Heifer calf.....	John Kimball.....	Yuba City.....	\$3 00
CLASS I—POULTRY.			
Trio of Black-Breasted Games.....	W. H. Jefferds.....	Brown's Valley.....	\$3 00
Trio of Brown Red Games.....	W. H. Jefferds.....	Brown's Valley.....	\$3 00
Trio of Blue Leghorns.....	W. H. Jefferds.....	Brown's Valley.....	\$3 00
Pair of Dark Brahmas.....	Mrs. A. Devolt.....	Marysville.....	\$1 50
Trio of Blue Japan Games.....	J. J. Bradley.....	Marysville.....	\$3 00
Pair of Black Langshans.....	G. B. Easton.....	Marysville.....	\$1 50
Trio of White Leghorn fowls.....	Mrs. H. A. Kells.....	Yuba City.....	\$3 00
Trio of White Leghorn chicks.....	Mrs. H. A. Kells.....	Yuba City.....	\$3 00
Trio of Langshan chicks.....	Mrs. H. A. Kells.....	Yuba City.....	\$3 00
Trio of Langshan fowls.....	Mrs. H. A. Kells.....	Yuba City.....	\$3 00
Trio of Bronze turkeys.....	Mrs. E. Matthews.....	Marysville.....	\$5 00
Trio of Brown Leghorns.....	Andrew Bligh.....	Marysville.....	\$3 00
Trio of White China geese.....	Mrs. M. Farrell.....	Marysville.....	\$3 00
Trio of Gray China geese.....	Mrs. M. Farrell.....	Marysville.....	\$3 00
Trio of Bronze turkeys.....	Mrs. M. Farrell.....	Marysville.....	\$2 50

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Trio of Black Spanish fowls	Mrs. M. Farrell	Marysville	\$3 00
Pair of Cayuga ducks	Mrs. M. Farrell	Marysville	\$2 00
Pair of Rouen ducks	Mrs. M. Farrell	Marysville	\$2 00
Trio of Houdans	Mrs. Jas. Taylor	Marysville	\$3 00
Trio of Black and White-Crested Polands	Mrs. E. Brow	Marysville	\$3 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best three varieties of apples	A. F. Abbott	Yuba City	\$3 00
Best four varieties of peaches	A. F. Abbott	Yuba City	\$5 00
Best two varieties of peaches	A. F. Abbott	Yuba City	\$3 00
Best six varieties of plums and prunes ..	A. F. Abbott	Yuba City	\$3 00
Best nectarines	A. F. Abbott	Yuba City	\$2 00
Best variety of peaches	A. F. Abbott	Yuba City	\$3 00
Loaf of wheat bread (special)	Miss Mabel Gray (15 years of age.)	Marysville	\$1 00
Biscuit (special)	Miss Mamie Gray (14 years of age.)	Marysville	\$1 00
Cake (special)	Miss Mamie Gray (14 years of age.)	Marysville	\$1 00
Best cake	Miss Jessie Hull (13 years of age.)	Yuba City	\$2 00
Domestic cake (special)	Mrs. George Van Buskirk	Marysville	\$1 00
Domestic bread (special)	Mrs. George Van Buskirk	Marysville	\$1 00
Domestic cake (special)	Miss Della Parks	Marysville	\$1 00
Domestic wheat bread (special)	Mrs. C. H. Crowell	Marysville	\$1 00
Best domestic brown bread	Mrs. C. H. Crowell	Marysville	\$2 00
Domestic cake (special)	Mrs. C. H. Crowell	Marysville	\$1 00
Domestic biscuit (special)	Mrs. C. H. Crowell	Marysville	\$1 00
Best domestic cake	Lucy Tucker	Marysville	\$2 00
Domestic cake (special)	Annie Tucker (14 years of age.)	Marysville	\$1 00
Best exhibit of dried peaches	Hugh Jones	Yuba City	\$3 00
Second best exhibit of dried apricots ..	Hugh Jones	Yuba City	\$1 00
Best exhibit of quinces	Hugh Jones	Yuba City	\$2 00
Best exhibit of two varieties of peaches ..	Hugh Jones	Yuba City	\$3 00
Exhibit of peppers (special)	Hugh Jones	Yuba City	\$1 00
Second best exhibit of cantaloupes	Hugh Jones	Yuba City	\$0 50
Best loaf of bread	Miss F. Easton (14 years of age.)	Marysville	\$2 00
Best domestic bread	Miss Mary Mc- Tavish	Marysville	\$2 00
Plate of biscuit (special)	Miss Mary Mc- Tavish	Marysville	\$1 00
Second best domestic bread	Miss G. E. Wilkie (13 years of age.)	Yuba City	\$1 00
Best plate of raised biscuit	Miss G. E. Wilkie (13 years of age.)	Yuba City	\$2 00
Domestic cake (special)	Miss G. E. Wilkie (13 years of age.)	Yuba City	\$1 00
Domestic biscuit (special)	Mrs. A. C. Spier	Marysville	\$1 00
Best plate of biscuit	Mrs. M. McAdams	Marysville	\$2 00
Plate of biscuit (special)	Miss M. J. Gee	Marysville	\$1 00
Second best soft-shelled almonds	J. B. Wilkie	Yuba City	\$1 00
Second best hard-shelled almonds	J. B. Wilkie	Yuba City	\$0 50
Second best English walnuts	J. B. Wilkie	Yuba City	\$1 00
Second best black walnuts	J. B. Wilkie	Yuba City	\$0 50

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best Mission olives.....	J. B. Wilkie.....	Yuba City.....	\$2 00
Best exhibit of fruit in glass.....	Mrs. J. B. Wilkie.....	Yuba City.....	\$5 00
Peppers in plant (special).....	Mrs. J. B. Wilkie.....	Yuba City.....	\$1 00
One dozen giant cucumbers (special).....	Mrs. J. B. Wilkie.....	Yuba City.....	\$1 00
Specimen peppers (special).....	Mrs. J. B. Wilkie.....	Yuba City.....	\$2 00
Chestnuts on limb (special).....	N. D. Coombs.....	Marysville.....	\$3 00
Best walnuts on limb (special).....	N. D. Coombs.....	Marysville.....	\$2 00
Best Egyptian oats.....	N. D. Coombs.....	Marysville.....	\$2 00
Wheat in sheaf (special).....	N. D. Coombs.....	Marysville.....	\$1 00
Second best barley.....	N. D. Coombs.....	Marysville.....	\$1 00
Display of wheat bread (special).....	Huldah Rubel.....	Marysville.....	\$1 00
Plate of biscuit (special).....	J. B. Smith.....	Marysville.....	\$1 00
Best exhibit of dried fruits.....	R. C. Kells.....	Yuba City.....	\$5 00
Second best exhibit of dried plums.....	R. C. Kells.....	Yuba City.....	\$1 50
Second best exhibit of dried prunes.....	R. C. Kells.....	Yuba City.....	\$1 50
Best exhibit of dried apricots.....	R. C. Kells.....	Yuba City.....	\$2 00
Best exhibit of dried nectarines.....	R. C. Kells.....	Yuba City.....	\$2 00
Second best exhibit of dried figs.....	R. C. Kells.....	Yuba City.....	\$1 00
Two species of a tomato tree (special).....	Eliza Stevenson.....	Marysville.....	\$1 00
Pomegranates (special).....	Eliza Stevenson.....	Marysville.....	\$1 00
Second best oranges and branch.....	Eliza Stevenson.....	Marysville.....	\$2 50
Best Salt Lake club wheat.....	N. F. Todd.....	Live Oak.....	\$3 00
Pomegranates (special).....	Mrs. R. Salas.....	Marysville.....	\$1 00
Second best butter.....	Mrs. C. E. Putman.....	Marysville.....	\$3 00
Domestic wheat bread (special).....	Mrs. C. E. Putman.....	Marysville.....	\$1 00
Domestic cake (special).....	Mrs. C. E. Putman.....	Marysville.....	\$1 00
Best exhibit of wheat flour.....	Buckeye Mill Co.....	Marysville.....	\$5 00
Best exhibit of corn meal.....	Buckeye Mill Co.....	Marysville.....	\$2 00
Exhibit of graham flour (special).....	Buckeye Mill Co.....	Marysville.....	\$2 00
Best six varieties of apples.....	A. F. Abbott.....	Yuba City.....	\$10 00
Second best one dozen cucumbers.....	T. B. Hull.....	Yuba City.....	\$0 50
Second best sweet potatoes.....	T. B. Hull.....	Yuba City.....	\$1 50
Best Japanese persimmons.....	T. B. Hull.....	Yuba City.....	\$1 00
Best pecans.....	T. B. Hull.....	Yuba City.....	\$3 00
Thirteen pots of begonias (pot plants).....	Mrs. J. R. Garrett.....	Marysville.....	\$2 00
Specimen sunflower (special).....	Chas. Kallenback.....	Marysville.....	\$1 00
Exhibit of pears and peaches (special).....	Fred. Mable.....	Brighton.....	\$2 00
Cut flowers (special).....	Miss Della Parks.....	Marysville.....	\$2 00
Bouquet flowers (special).....	Miss Clyda Parks.....	Marysville.....	\$2 00
Plate of biscuit (special).....	Miss Maud Hyde.....	Marysville.....	\$1 00
Two species of pot plants, tuberose (special).....	Mrs. F. Hartmann.....	Marysville.....	\$1 00
Best five samples of wheat in sheaf.....	C. J. Newkom.....	Yuba City.....	\$5 00
Best cheese, one year old or over.....	John Burns.....	Nicolaus.....	\$5 00
Best cheese, under one year old.....	John Burns.....	Nicolaus.....	\$5 00
Best exhibit of carrots.....	Mrs. Jas. Taylor.....	Marysville.....	\$1 00
Best exhibit of red sugar beets.....	Mrs. Jas. Taylor.....	Marysville.....	\$1 00
Best exhibit of yellow sugar beets.....	Mrs. Jas. Taylor.....	Marysville.....	\$1 00
Second best cheese.....	Mrs. Jas. Taylor.....	Marysville.....	\$3 00
Best four plates of Lawton blackberries.....	Fred. Hall.....	Empire Hill.....	\$2 00
Best hard-shell almonds.....	Richard Hoskin.....	Marysville.....	\$1 00
Best dried prunes.....	Richard Hoskin.....	Marysville.....	\$3 00
Hungarian prunes (special).....	Richard Hoskin.....	Marysville.....	\$1 00
Kelsey Japan plums (special).....	Richard Hoskin.....	Marysville.....	\$1 00
Best assorted jellies in glass.....	Mrs. H. H. Williams.....	Yuba City.....	\$5 00
Second best assorted fruit in glass.....	Mrs. H. H. Williams.....	Yuba City.....	\$3 00
Second best twelve varieties of apples.....	J. P. Onstott.....	Yuba City.....	\$5 00
Best three varieties of figs.....	J. P. Onstott.....	Yuba City.....	\$2 00
Second best exhibit of twenty-one varieties of grapes.....	J. P. Onstott.....	Yuba City.....	\$5 00
Single bunch of grapes (special).....	J. P. Onstott.....	Yuba City.....	\$1 00
Best dried figs.....	J. P. Onstott.....	Yuba City.....	\$2 00
Best wine grapes.....	J. P. Onstott.....	Yuba City.....	\$5 00
Three loaves of wheat bread (special).....	Mrs. S. Wimberly.....	Yuba City.....	\$1 00
One plate of pomegranates (special).....	Mrs. Georgia Crosette.....	Yuba City.....	\$1 00
Lot of cut flowers (special).....	Mrs. Georgia Crosette.....	Yuba City.....	\$1 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Second best pickles in glass	Misses Lulu and Kate Murphy	Marysville	\$1 00
Display of pine nuts (special)	Chas. and Will. Murphy	Marysville	\$1 00
Two Cuban Queen watermelons (special)	A. J. Cumberson	Marysville	\$1 00
Second best two varieties of peaches	J. W. Hicks	Yuba City	\$2 00
Exhibit of dried peaches (special)	J. W. Hicks	Yuba City	\$2 00
Second best four varieties of plums	J. W. Hicks	Yuba City	\$2 00
Second best three varieties of prunes	J. W. Hicks	Yuba City	\$2 00
Second best three varieties of pears	J. W. Hicks	Yuba City	\$2 00
Assorted preserves, pickles, etc. (special)	Mrs. J. Evans	Marysville	\$3 00
Exhibit of proper wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of Genesee wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of Chili wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of Australian wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of Hardy wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of club wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of Pride of Butte wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of snowflake wheat	T. B. Hull	Yuba City	\$3 00
Exhibit of mixed varieties of wheat	T. B. Hull	Yuba City	\$1 50
Exhibit of barley	T. B. Hull	Yuba City	\$2 00
Best exhibit by one farmer	T. B. Hull	Yuba City	\$5 00
Best exhibit of nuts	T. B. Hull	Yuba City	\$3 00
Popcorn in husk (special)	T. B. Hull	Yuba City	\$1 00
Exhibit of pears	T. B. Hull	Yuba City	\$5 00
Seven varieties soft-shell almonds	T. B. Hull	Yuba City	\$3 00
Two varieties hard-shell almonds	T. B. Hull	Yuba City	\$1 00
Best marrow squash	T. B. Hull	Yuba City	\$1 00
Best hubbard squash	T. B. Hull	Yuba City	\$1 00
Second best mammoth squash	T. B. Hull	Yuba City	\$0 50
Second best watermelon	T. B. Hull	Yuba City	\$0 50
Best muskmelon	T. B. Hull	Yuba City	\$1 00
Best cantaloupe	T. B. Hull	Yuba City	\$1 00
Best casaba (other varieties)	T. B. Hull	Yuba City	\$1 00
Best tomatoes	T. B. Hull	Yuba City	\$1 00
Best blood turnip beets	T. B. Hull	Yuba City	\$1 00
Half dozen yellow corn, green (special)	W. H. Jefferds	Brown's Valley	\$1 00
Display of plums (special)	W. H. Jefferds	Brown's Valley	\$1 00
Display of pears, apples, peaches, walnuts, almonds, etc. (special for exhibit)	Mrs. R. Keck	Yuba City	\$10 00
Display of watermelons, beets, tomatoes, squashes, cucumbers, cantaloupes, peppers, and eggplants (special for best and largest exhibit)	Mrs. R. Keck	Yuba City	\$20 00
Best half bushel proper wheat	Thomas Smith	Marysville	\$3 00
Best Pride of Butte wheat	C. R. Boyd	Yuba City	\$3 00
Best club wheat	C. R. Boyd	Yuba City	\$3 00
Best Chili wheat	James Murray	Yuba City	\$3 00
Hungarian and silver prunes and lemon cling peaches (special)	Jno. H. Purkiss	Brown's Valley	\$2 00
Best display of canned fruits	Sutter Can'ing and Packing Co.	Yuba City	\$10 00
Best half bushel sweet potatoes	A. J. Cumberson	Marysville	\$3 00
General exhibit of fruits (special)	Mrs. A. C. Gray	Marysville	\$3 00
Second best display jams in glass	Mrs. A. C. Gray	Marysville	\$2 00
Ten pounds dried figs (special)	Mrs. A. C. Gray	Marysville	\$1 00
Pomegranates (special)	Miss Leila Fisher	Marysville	\$1 00
Best evergreen millet	Joseph Chandon	Marysville	\$2 00
Egyptian corn (special)	Joseph Chandon	Marysville	\$1 00
Cactus, ornamental plant (special)	Mrs. A. Devolt	Marysville	\$1 00
Begonias, flowering plants (special)	Mrs. A. Devolt	Marysville	\$1 00
Ornamental plants (special)	Mrs. Herzog	Marysville	\$1 00
Display apples, pears, plums, etc. (spec'l)	Mrs. C. Frye	Meridian	\$2 00
Display jellies in glass (special)	Mrs. W. W. Holland	Marysville	\$1 00
Display fruit in glass (special)	Mrs. W. W. Holland	Marysville	\$1 00
Best display grapes, all varieties	A. C. Gray	Marysville	\$10 00
Second best display table grapes	A. C. Gray	Marysville	\$3 00
Second best display raisin grapes	A. C. Gray	Marysville	\$3 00
Best display seedless grapes	A. C. Gray	Marysville	\$5 00
Display Egyptian corn (special)	B. F. Walton	Yuba City	\$2 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Proper, Club, and Chili wheat, in ear (sp'cl)	B. F. Walton	Yuba City	\$3 00
Second best display seedless grapes	Wm. Stafford	Yuba City	\$3 00
Table grapes (special)	J. Monger	Yuba City	\$1 00
Quinces (special)	J. Monger	Yuba City	\$1 00
Almonds (special)	J. Monger	Yuba City	\$1 00
Fruit in glass (special)	Mrs. L. C. Serret	Marysville	\$1 00
Mince meat, in glass (special)	Mrs. L. C. Serret	Marysville	\$1 00
Loaf wheat bread (special)	Mrs. L. C. Serret	Marysville	\$1 00
Basket cut flowers (special)	Mrs. M. R. Garcia	Marysville	\$1 00
Jellies, in glass (special)	Mrs. M. R. Garcia	Marysville	\$1 00
Tuberose, flowering plant (special)	Mrs. J. G. Cohn	Marysville	\$1 00
Best ten pounds dried apples	G. W. Hutchins	Marysville	\$3 00
Best ten pounds dried pears	G. W. Hutchins	Marysville	\$3 00
Best ten pounds dried plums	G. W. Hutchins	Marysville	\$3 00
Soft-shelled almonds	G. W. Hutchins	Marysville	\$2 00
Half bushel early rose potatoes	G. W. Hutchins	Marysville	\$2 00
Second best general exhibit dried fruits	G. W. Hutchins	Marysville	\$2 50
Best preserves, in glass	Miss Eva Burt	Marysville	\$5 00
Second best jellies, in glass	Miss Eva Burt	Marysville	\$3 00
Best pickles, in glass	Miss Eva Burt	Marysville	\$3 00
Best jams, in glass	Miss Eva Burt	Marysville	\$3 00
Display five-pound roll butter (special)	Mrs. E. Matthews	Marysville	\$3 00
Best tub or crock butter	Mrs. E. Matthews	Marysville	\$3 00
Best display domestic bread	Mrs. E. Matthews	Marysville	\$2 00
Second best loaf brown bread	Mrs. E. Matthews	Marysville	\$1 00
Plate of biscuits (special)	Mrs. E. Matthews	Marysville	\$1 00
Second best hanging baskets of flowers	Miss Ida Erich	Marysville	\$1 00
Best pomegranates	Mrs. Frank Parks	Marysville	\$2 00
Display table grapes (special)	Geo. Thompson	West Butte	\$3 00
Best bunch grapes	Geo. Thompson	West Butte	\$2 00
Banana melons (special)	Geo. Thompson	West Butte	\$1 00
Best exhibit oranges	Mrs. Mary Karr	Marysville	\$5 00
Best exhibit lemons	Mrs. Mary Karr	Marysville	\$5 00
Pomegranates (special)	F. Terstegge	Marysville	\$1 00
Two varieties squashes (special)	G. W. Peacock	Marysville	\$2 00
Second best preserves, in glass	Misses Lulu and Kate Murphy	Marysville	\$3 00
Loaf of wheat bread (special)	Miss M. J. Gee	Marysville	\$1 00
Domestic cake (special)	Miss M. J. Gee	Marysville	\$1 00
Plate of biscuit (special)	Mrs. E. Brow	Marysville	\$1 00
Plate of biscuit (special)	Miss Annie Matti (14 years of age)	Marysville	\$1 00
Best fancy cake	Miss May Bradley (12 years of age)	Marysville	\$2 00
Fancy cake (special)	Miss Stella Howser (10 years of age)	Marysville	\$1 00
Loaf of graham bread (special)	Miss Belle Cooley	Marysville	\$1 00
Best six varieties of pears	J. Hollister	Marysville	\$10 00
Best table grapes	J. Hollister	Marysville	\$5 00
Second best wine grapes	J. Hollister	Marysville	\$3 00
Best exhibit of clothing, etc.	Holland & Lum- bard	Marysville	\$10 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best express wagon	S. H. Bradley	Marysville	\$6 00
Best open buggy	S. H. Bradley	Marysville	\$6 00
Best cart	S. H. Bradley	Marysville	\$4 00
Best gopher trap	White, Cooley & Cutts	Marysville	\$1 50

TRANSACTIONS OF THE
THIRD DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best posthole auger.	White, Cooley & Cutts	Marysville.....	\$2 50
Best grain separator.....	White, Cooley & Cutts	Marysville.....	\$5 00
Rest hay and straw cutter.....	White, Cooley & Cutts	Marysville.....	\$3 00
Best hand corn planter.....	White, Cooley & Cutts	Marysville.....	\$2 00
Best refrigerator	J. B. Sanford.....	Marysville.....	\$2 50

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Five dozen No. 1 brooms	J. A. Le Favor....	Sacramento.....	\$3 00
Five dozen No. 2 brooms	J. A. Le Favor....	Sacramento.....	\$2 00
Model of full-rigged ship	S. H. Evans.....	Marysville.....	\$1 00
Eight scales, three safes, and three trucks.	W. B. Wilshire & Co.	San Francisco ..	Sp'l men. and dip.
Inlaid card table	E. H. Kennerson ..	Marysville.....	\$3 00
Hand-made horseshoes (not made in the district)	Dan. Morgan	Grass Valley....	Sp'l men. and dip.
Domestic sewing machine (all purposes).	R. T. Schofield....	Marysville.....	\$5 00
Domestic sewing machine (fancy work).	R. T. Schofield....	Marysville.....	\$5 00
Exhibit of harness and saddles.....	V. L. Earnshields.	Marysville.....	\$10 00
Exhibit of double harness	V. L. Earnshields.	Marysville.....	\$5 00
Exhibit of single harness	V. L. Earnshields.	Marysville.....	\$3 00
Exhibit of saddles.....	V. L. Earnshields.	Marysville.....	\$3 00
Gasfixtures, lanterns, globes, etc. (special)	Marysville Coal Gas Co.	Marysville.....	\$5 00
Carved chain of manzanita, thirty links (special).	C. C. Newkom	Yuba City	\$1 00
Display of furniture.....	Frost & Shaffer....	Marysville.....	\$10 00
Lounge	Frost & Shaffer....	Marysville.....	\$2 00
Table.....	Frost & Shaffer....	Marysville.....	\$2 00
Parlor set	Frost & Shaffer....	Marysville.....	\$5 00
Office chair.....	Frost & Shaffer....	Marysville.....	\$2 00
Bookcase	Frost & Shaffer....	Marysville.....	\$2 00
Mattress	Frost & Shaffer....	Marysville.....	\$2 00
Spring bed	Frost & Shaffer....	Marysville.....	\$2 00
Set of chairs.....	Frost & Shaffer....	Marysville.....	\$2 00
Exhibit of silverware.....	Peter Engel.....	Marysville.....	\$5 00
Exhibit of flat and hollow plated-ware	Peter Engel.....	Marysville.....	\$5 00
Exhibit of clocks	Peter Engel.....	Marysville.....	\$5 00
Exhibit of hand-made soap.....	Mrs. J. B. Wilkie ..	Yuba City	\$2 00
Exhibit of soft soap	Mrs. J. B. Wilkie ..	Yuba City	\$2 00
Range, for family use	White, Cooley & Cutts	Marysville.....	\$5 00
Cooking stove.....	White, Cooley & Cutts	Marysville.....	\$5 00
Heating stove.....	White, Cooley & Cutts	Marysville.....	\$3 00
Oil stove	White, Cooley & Cutts	Marysville.....	\$2 00
Exhibit of hardware.....	White, Cooley & Cutts	Marysville.....	\$5 00
Exhibit of sporting instruments.....	White, Cooley & Cutts	Marysville.....	\$5 00
Set of hand-painted crockery.....	White, Cooley & Cutts	Marysville.....	\$3 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Set of stained glassware	White, Cooley & Cutts	Marysville	\$2 00
One half dozen lamps	White, Cooley & Cutts	Marysville	\$2 00
One half dozen vases	White, Cooley & Cutts	Marysville	\$2 00
One half dozen flower pots	White, Cooley & Cutts	Marysville	\$2 00
Hand corn planter	White, Cooley & Cutts	Marysville	\$2 00
Exhibit of birds (taxidermy)	W. F. Peacock	Marysville	\$5 00
Single specimen	W. F. Peacock	Marysville	\$3 00
Exhibit of drugs, etc.	J. A. Woodward	Marysville	\$5 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Table scarfs, cushions, etc.	Mrs. J. O. Brittan	South Butte	\$10 00
Embroidery and knitting	Mrs. J. O. Brittan	South Butte	Spe. men.
Cushions, crochet, lace, and knitting work (special)	Mrs. Jas. Taylor	Marysville	\$4 00
Patchwork bed quilt (special)	Mrs. S. C. Clark	Marysville	\$2 00
Cantaloupe seed bags (special)	Mrs. F. C. McLaughlin	Marysville	\$1 00
Knitting and crochet work (special)	Mrs. Ida White	Yuba City	\$3 00
Knitting and fancy work (special)	Miss Ida Marcuse	Marysville	\$3 00
Knitting work and silk quilts (special)	Mrs. M. A. Marcuse	Marysville	\$3 00
Knitting and crochet work (special)	Mrs. R. A. Dupee	Marysville	\$2 00
Lambrequin (special)	Mrs. W. W. Holland	Marysville	\$1 00
Worsted and cotton crochet (special)	Mary Farrell	Marysville	\$1 00
Embroidered tidy and table scarf (special)	Maud Hyde	Marysville	\$2 00
Worsted lace, shell and hair work (special)	Miss T. Hartmann	Marysville	\$2 00
Hammered brass (special)	Miss Nellie Rainey	Marysville	\$1 00
Crazy work sofa cushion (special)	Miss Louise Cutts	Marysville	\$1 00
Wreath of hair work	Miss Gus. Lehman	Marysville	\$1 00
Satin embroidery and ribbon work (special)	Mrs. Simon Hochstadter	Marysville	\$2 00
Crochet and embroidery work (special)	Miss T. Friesleben	Marysville	\$2 00
Felt and ribbon work toilet set (special)	Miss Leila Fisher	Marysville	\$1 00
Shell and lace work (special)	Miss Sadie Bradley	Marysville	\$1 00
Netting pillow and sheet shams (special)	Miss Jennie Barthe	Marysville	\$1 00
Rug and ottoman covers (special)	Mrs. C. J. Adams	Wheatland	\$2 00
Quilt, lamp mat, etc. (special)	Mrs. Geo. Russell	Marysville	\$2 00
Apron, thirty-six years old (special)	Mrs. Herzog	Marysville	\$1 00
Bedsread and lace work (special)	Mrs. A. W. Cutts	Marysville	\$3 00
Silk embroidered tidies, etc. (special)	Miss Nellie Crook	Marysville	\$2 00
Knit and crochet work (special)	Mrs. W. H. Crook	Marysville	\$3 00
Embroidery, crochet, and fancy needle work (special for exhibit)	Mrs. N. J. Saviers	Marysville	\$7 00
Crochet, tidies, and lace (special mention)	Lizzie Gelzhauser	Marysville	\$5 00
Knit shawl (special)	Mrs. B. F. Davis	Marysville	\$1 00
Hair and embroidery work, lace and crochet (special)	Miss May E. Lopez	Marysville	\$4 00
Lace pillow shams (special)	Miss Eva Burt	Marysville	\$1 00
Embroidery work (special)	Miss Ida Erich	Marysville	\$2 00
Embroidered table cover, etc. (special)	Miss Carrie Erich	Marysville	\$2 00
Embroidered piano cover, etc. (special)	Miss Katy Farrell	Marysville	\$2 00
Hair work (special)	Mrs. O. W. McGowan	Sacramento	\$1 00
Hand knit socks (special)	Mrs. M. Farrell	Marysville	\$1 00

TRANSACTIONS OF THE
FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Knitting and patchwork (special)	Mrs. H. Spooner ..	Yuba City	\$3 00
Embroidered banners, etc. (special)	Miss L. Aulman ..	Marysville	\$2 00
Crochet tidies, shawl, skirt, etc. (special)	Mrs. A. C. Spier ..	Marysville	\$2 00
Knit and crochet work (special)	Miss Della Parks ..	Marysville	\$2 00
Embroidered silk quilt (special)	Mrs. Frank Parks ..	Marysville	\$1 00
Silk cushion (special)	Miss K. Sullivan ..	Marysville	\$1 00
Foot mat (special)	Miss S. M. Sharp ..	Marysville	\$1 00
Sofa cushion and carriage robe (special)	Mrs. C. W. Thresher	Gridley	\$2 00
Embroidery, crochet, and worsted work (special)	Miss Clara Wissel ..	Marysville	\$2 00
Embroidered quilt and scarf (special)	Mrs. Isaac Bradley ..	Marysville	\$2 00
Painted platter, forty-five years old (special)	Mrs. J. Rutherford ..	Marysville	\$1 00
Best afghans	Mrs. John Hale ..	Yuba City	\$3 00
Crochet and Spanish work (special)	Mrs. J. R. Garrett ..	Marysville	\$1 00
Crochet tidy, lambrequin, etc. (special)	Mrs. Henry Day ..	Marysville	\$2 00
Crochet tidies and lace (special)	Mrs. Frank Blue ..	Marysville	\$2 00
Plush orange banner (special)	Eliza Stevenson ..	Marysville	\$1 00
Braided pillow shams (special)	Mrs. Mary Karr ..	Marysville	\$1 00
Fancy needlework of Domestic sewing machine (special)	R. T. Schofield ..	Marysville	\$2 00
Silk embroidered sofa cushion (special)	Miss M. Bradley ..	Marysville	\$2 00
Hook-made rug (special)	Mrs. E. B. Morse ..	Marysville	\$1 00
Work basket (special)	Miss Lizzie Bowen ..	Marysville	\$1 00
Ribbon work tidy (special)	Miss Lizzie Nagle ..	Marysville	\$1 00
Embroidered slippers, scarf, etc. (special)	Mrs. J. Pumyea ..	Marysville	\$2 00
Shawl, pillow shams, lace, etc. (special)	Mrs. C. Simpson ..	Marysville	\$3 00
Silk tidy, crochet lace, etc. (special)	Mrs. E. H. Kenne- son ..	Marysville	\$3 00
Embroidered buggy robe, quilt, etc. (special)	Mrs. M. Pumyea ..	Marysville	\$2 00
Spanish work (special)	Mrs. S. Pumyea ..	Marysville	\$1 00
Honiton lace (special)	Miss J. Corliss ..	Marysville	\$1 00
Embroidered scarf and pillow (special)	Mrs. F. M. Vance ..	Yuba City	\$2 00
Display of worsted work (special)	Miss M. Brow ..	Marysville	\$2 00
Best display five pieces of carpet	Frost & Shaffer ..	Marysville	\$5 00
Best display five foot mats	Frost & Shaffer ..	Marysville	\$2 00
Knit lace and fancy work (special exhibit)	Mrs. L. C. Serret ..	Marysville	\$5 00
Second best exhibit embroidery, crochet, and knitting	Mrs. A. Clothier ..	Marysville	\$7 50
Knit and crochet work (special)	Annie Peters ..	Yuba City	\$2 00
Patchwork quilts, etc. (special)	Mrs. S. Wimberly ..	Marysville	\$3 00
Infant's afghan (special)	Mrs. M. A. Lynch ..	Marysville	\$1 00
Worsted and crochet work (special)	Ada Chandon ..	Marysville	\$3 00
Embroidered scarf, cushion, etc. (special)	Cordie Chandon ..	Marysville	\$3 00
Doylies (special)	Mrs. J. C. Bradley ..	Marysville	\$1 00
Fancy work (special)	Mrs. J. D. Crossette ..	Marysville	\$1 00
Best silk embroidered quilt	Grace Churchguild ..	Wheatland	\$2 00
Knit lace and bedspread (special)	Mrs. H. Gee ..	Marysville	\$2 00
Tufted spread and towel tidies (special)	Mrs. Wm. Alvord ..	Yuba City	\$2 00
Crochet and knitting work (special)	Miss Ida Klocken- baum ..	Marysville	\$2 00
Hand-made linen napkins (special)	Mrs. C. M. Klock- enbaum ..	Marysville	\$1 00
Best gent's dressing gown	Mrs. W. G. Murphy ..	Marysville	\$2 00
Best home-made boy's suit	Mrs. Frank Parks ..	Marysville	\$3 00
Sofa tidies and mantel scarf (special)	Miss Kate Murphy ..	Marysville	\$2 00
Embroidery, crochet, etc. (special exhibit)	Miss Lulu Murphy ..	Marysville	\$4 00
Lambrequin of sea moss (special)	Mrs. J. H. Whipple ..	Marysville	\$1 00
Rag rug (special)	Mrs. T. J. Simpson ..	Marysville	\$1 00
Embroidered scarf, banner, etc. (special)	Miss Belle Todd ..	Live Oak	\$2 00
Crochet worsted tidies (special)	Miss Emma Todd ..	Live Oak	\$1 00
Worsted toilet set (special)	Mrs. G. J. Crossley ..	Marysville	\$1 00
Crochet tidies and cap (special)	Miss L. McDaniels ..	Marysville	\$2 00

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Crayon head (special)	Miss Ida Marcuse.	Marysville	\$1 00
Cabinet collection quartz, etc. (special)...	Mrs. R. A. Dupee.	Marysville	\$1 00
Manuscript, diaries, etc (special)	Mrs. R. A. Dupee.	Marysville	\$4 00
Five hand-painted pictures on canvas, and painted foot stool (special)	Mrs. W. W. Hol- land	Marysville	\$4 00
Largest and best exhibit hand-painted mirror, panels, plaques, plates, oil paintings, etc. (special)	Mrs. J. R. Garrett.	Marysville	\$10 00
Case of wax flowers (special)	Miss Teresa Hart- man	Marysville	\$1 00
Case of wax work (special)	Miss Sadie Brad- ley	Marysville	\$1 00
Bouquet paper flowers (special)	Miss J. Barthe	Marysville	\$1 00
Second best exhibit landscape paintings from nature, crayon work, etc.	Miss M. C. Fuller.	Marysville	\$7 50
Five specimens job printing	Appeal Pub. Co.	Marysville	\$5 00
Two samples book printing	Appeal Pub. Co.	Marysville	\$5 00
Two specimens bookbinding	Appeal Pub. Co.	Marysville	\$3 00
Ten samples card printing	Appeal Pub. Co.	Marysville	\$2 00
Panels, paper snowballs, and poppies (special)	Miss Nellie Crook.	Marysville	\$2 00
Special exhibit hand-painted plaques, panels, banners, etc., and luster paint- ings	Mrs. N. J. Saviers.	Marysville	\$5 00
First best globe of wax flowers	Miss Katie Farrell.	Marysville	\$2 00
Two Kensington paintings (special)	Mrs. Geo. Van Bus- kirk	Marysville	\$2 00
Basket of paper flowers, basket of wax flowers, and wreath and cross of wax flowers (special)	Mrs. A. C. Spier	Marysville	\$3 00
Kensington paintings, luster painting, crayon work, and bobatine modelings, etc. (special)	Miss Linda Aul- man	Marysville	\$4 00
Case paper flowers (special)	Mrs. J. Evans.	Marysville	\$1 00
Display of oil paintings	Mrs. Kate Boyn- ton	Oroville	\$10 00
Ten samples job printing, cards (special)	A. L. Brown	Marysville	\$2 00
Kensington painting (special)	Miss Phoebe Smith.	Yuba City	\$1 00
Paper and feather flowers (special)	Mary E. Krempel.	Marysville	\$2 00
Crayon work (special)	Miss Eda Walton.	Yuba City	\$1 00
Bouquet of paper flowers (special)	Miss Lizzie Nagle.	Marysville	\$1 00
Best collection of photographs	P. W. Griffiths	Marysville	\$8 00
Best collection of views	P. W. Griffiths	Marysville	\$3 00
Luster painting, etc. (special)	Mrs. J. D. Cros- sette	Marysville	\$2 00
Painted lambrequin, etc. (special)	Jessie Krocken- baum	Marysville	\$1 00

JUVENILE DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Second best calico dress	Mamie Bradley (15 years old).....	Marysville	\$4 00
Calico dress (special)	May Santry (14 years old).....	Marysville	\$1 00
Charm string, 500 buttons	May Santry.....	Marysville	\$1 00
Hand-made aprons and knitted lace.....	May Santry.....	Marysville	\$2 00
Calico dress (special)	Etta Efken (14 years old).....	Marysville	\$1 00
Charm string, 945 buttons (special).....	Etta Efken.....	Marysville	\$1 00
Hand-made pillowshams (special).....	Etta Efken.....	Marysville	\$1 00
Third best calico dress	Lulu Dupee (8 years old).....	Marysville	\$3 00
Calico dress (special).....	Maude Hyde (14 years old).....	Marysville	\$1 00
Scrapbook (special).....	Nellie Harrington.....	Marysville	\$1 00
Hand-made apron (special).....	Katy Cutts (10 years old).....	Marysville	\$1 00
Knitted worsted embroidery (special).....	Emma Herzog.....	Marysville	\$1 00
Best calico dress	Lucy Cunningham (11 years old).....	Marysville	\$5 00
Best oil painting.....	Amy G. Cohn (13 years old).....	Marysville	\$2 00
Silk embroidered footstool (special).....	Amy G. Cohn.....	Marysville	\$1 00
Knitted lace, forty different pieces of money, crochet, etc. (special).....	Tudie Stewart	Marysville	\$2 00
Best bouquet of worsted flowers.....	Agnes Moran.....	Marysville	\$1 00
Charm string, 440 buttons (special).....	Agnes Moran.....	Marysville	\$1 00
Charm string, 630 buttons (special).....	Lulu Tupen.....	Marysville	\$1 00
Calico dress (special)	Carrie Erich (14 years old).....	Marysville	\$1 00
Crochet and embroidery work (special).....	Dora McWhorter (11 years old).....	Marysville	\$2 00
Calico dress (special)	Dora McWhorter.....	Marysville	\$1 00
Fifth best calico dress.....	Annie Matti (14 years old).....	Marysville	\$1 00
Scrapbook (special).....	Bertha Cornforth, (9 years old).....	Marysville	\$1 00
Crochet sofa pillow (special).....	Stella Howser (10 years old).....	Marysville	\$1 00
Scrapbook (special).....	Louis Parks (10 years old).....	Marysville	\$1 00
Charm string, 525 buttons (special).....	Louis Parks.....	Marysville	\$1 00
Charm string, 757 buttons (special).....	Eliza Rodriguez.....	Marysville	\$1 00
Fancy pincushion, three crochet tidies, and crochet lace.....	Hattie Slicer.....	Marysville	\$2 00
Thirty-seven samples of crochet lace (special).....	Jennie Tucker.....	Marysville	\$1 00
Fourth best calico dress.....	Jennie Tucker (12 years old).....	Marysville	\$2 00
Crochet tidy and lambrequin (special).....	Agnes Bligh.....	Marysville	\$1 00
Charm string, 590 buttons (special).....	Jennie Bligh.....	Marysville	\$1 00
Doll, hand-made clothes (special).....	Hazel Chandon.....	Marysville	\$1 00
Crochet lamp mats, etc. (special).....	Hallie Murphy.....	Marysville	\$2 00
Silk in its natural state (special).....	Seymour Marcuse.....	Marysville	\$1 00

SPEED PROGRAMME.

TUESDAY, AUGUST 30, 1887.

RACE No. 1—SPECIAL TROTTING.

Purse, one hundred and fifty dollars. First horse, seventy-five dollars; second, thirty-seven and one half dollars; third, twenty-two and one half dollars; fourth, fifteen dollars. For all horses owned in the Thirteenth District.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Millboy, by Brigadier	Frank Grant .....	..... Marysville.
Sutter Boy, by Echo	W. P. Harkey .....	..... Yuba City.
Patchwork, by Brigadier	Charles Raish .....	..... Marysville.

Position at Starting.

1. Millboy
2. Patchwork
3. Sutter Boy

Position at Close.

- | | |
|------------------|------|
| Sutter Boy | 1 |
| Millboy | 2 |
| Patchwork | dis. |

Time—2:40½; 2:44½; 2:41.

RACE No. 2—RUNNING.

Purse, one hundred dollars. First horse, fifty dollars; second, twenty-five dollars; third, fifteen dollars; fourth, ten dollars. Free for all. Half mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sir Thad, by Thad Stevens	Patrick Riley .....	..... Grass Valley.
Johnny Moore, by Oregon Charley	J. C. Moore .....	..... Moore's Station.
Emma T, by Scamperdown	A. C. Taylor .....	..... Gridley.
White Stockings, by Tom Atchison	George Hackett .....	..... Marysville.
Clifton Bell, unknown	George Simpson .....	..... Marysville.
Surprise, by Langford	M. McCrimmon .....	..... Lincoln.

Position at Starting.

1. White Stockings
2. Clifton Bell
3. Sir Thad
4. Surprise
5. Johnny Moore
6. Emma T

Position at Close.

- | | |
|-----------------------|---|
| Sir Thad | 1 |
| Johnny Moore | 2 |
| Clifton Bell | 3 |
| Surprise | 4 |
| Emma T | 5 |
| White Stockings | 6 |

Time—0:49¾.

RACE No. 3—TROTTING.

3:00 Class. Purse, two hundred dollars. Free for all. First horse, one hundred dollars; second, fifty dollars; third, thirty dollars; fourth, twenty dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Alpheus, by Mambrino Wilkes	A. L. Hinds	San Francisco.
Ginger, by Hiram Woodruff	Ensign & Hollister	Grass Valley.
Rose Mc, by Alex Button	G. W. Woodard	Yolo.
Daisy A, by Friday McCracken	D. E. Knight	Marysville.
Olive E, by Prince	I. L. McDaniel	Biggs.
Geronimo, by Inca	C. A. Durfee	Los Angeles.
Bird, by Tilton Almont	W. W. Marshall	Willows.
Daisy, by John Mackey	E. G. Clark	Biggs.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Alpheus	Geronimo
2. Ginger	Rose Mc
3. Rose Mc	Alpheus
4. Daisy A	Daisy A
5. Olive E	Bird
6. Geronimo	Ginger
7. Bird	Olive E
8. Daisy	Daisy

Time—2:35 $\frac{1}{4}$; 2:31 $\frac{1}{2}$; 2:31 $\frac{1}{4}$; 2:34.

WEDNESDAY, AUGUST 31, 1887.

RACE No. 4—TROTTING.

2:35 Class. Purse, three hundred dollars. Free for all. First horse, one hundred and fifty dollars; second, seventy-five dollars; third, forty-five dollars; fourth, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Col. Hawkins, by Echo	S. C. Tryon	Sacramento.
Alpheus, by Mambrino Wilkes	A. L. Hinds	San Francisco.
Florence R, by Nutwood	G. W. Griffin	Woodland.
Lady Lightfoot, by Chieftain	W. R. Merrill	Willows.
Manzanita, by Elmo	James Dwain	Salinas.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Col. Hawkins	Florence R
2. Alpheus	Col. Hawkins
3. Florence R	Manzanita
4. Lady Lightfoot	Alpheus
5. Manzanita	Lady Lightfoot

Time—2:34 $\frac{1}{4}$; 2:29 $\frac{1}{4}$; 2:30; 2:31.

RACE NO. 5—RUNNING.

Purse, two hundred dollars. Free for all. First horse, one hundred dollars; second, fifty dollars; third, thirty dollars; fourth, twenty dollars. Half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Johnny Moore, by Oregon Charley	J. C. Moore	Moore's Station.
Sally Hampton, by Boots	Dan. Dennison	Sacramento.
Confidence, by Walnut Bark	L. A. Blassingame	Fresno.
Rackety Jack, by Ramadam	D. H. McAfee	Stockton.
Surprise, by Langford	M. McCrimmon	Lincoln.
White Stockings, by Tom Atchison	George Simpson	Marysville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Johnny Moore	Confidence
2. Sally Hampton	Rackety Jack
3. Confidence	Surprise
4. Rackety Jack	Johnny Moore
5. Surprise	Sally Hampton
6. White Stockings	White Stockings

Time—0:50 $\frac{1}{4}$; 0:50 $\frac{1}{4}$.

RACE NO. 6—RUNNING.

Purse, two hundred and fifty dollars. Free for all. First horse, one hundred and twenty-five dollars; second, sixty-two dollars and fifty cents; third, thirty-seven dollars and fifty cents; fourth, twenty-five dollars. Three-fourth mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Black Pilot, by Echo	J. H. Muse	Oakland.
Blue Bonnet, by Joe Hooker	Dan Dennison	Sacramento.
Sir Thad, by Thad Stevens	Patrick Riley	Grass Valley.
Daisy D, by Wheatley	James Dwain	Salinas.
Menlo, by Young Prince	M. McCrimmon	Lincoln.
Jo Hamilton, by Clifton	I. L. McDaniel	Biggs.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Black Pilot	Daisy D
2. Blue Bonnet	Sir Thad
3. Sir Thad	Blue Bonnet
4. Daisy D	Black Pilot
5. Menlo	Menlo
6. Jo Hamilton	Jo Hamilton

Time—1:17; 1:16.

RACE NO. 7—TROTTING.

Purse, fifty dollars. First horse, twenty dollars; second, ten dollars; third, five dollars; fourth, five dollars; fifth, five dollars; sixth, five dollars. Free for all. Horse trotting one mile nearest to four minutes wins.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Young Harkey	Wm. Nutley	Yuba City.
Maud	Wm. Robinson	Yuba City.
Prince	Jacob Schimpf	Marysville.
Buckskin	Geo. VanBuskirk	Marysville.
Bonney	George Simpson	Marysville.

RACE No. 7—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Bonney	Bonney
2. Prince	Prince
3. Buckskin	Buckskin
4. Young Harkey	Young Harkey
5. Maud	Maud

Time—4:01; 3:58; 3:52; 3:49; 6:01.

THURSDAY, SEPTEMBER 1, 1887.

RACE No. 8—WALKING.

Purse, fifty dollars. First horse, thirty dollars; second, twenty dollars. Single stallions. Horses in district.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Don	W. Gardner	Marysville.
Victor Eagle	J. J. McGrath	Marysville.
Slattery	M. V. Nelson	Marysville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Slattery	Slattery
2. Don	Don
3. Victor Eagle	Victor Eagle

Time—11:07; 11:11.

RACE No. 9—WALKING.

Purse, fifty dollars. First team, thirty dollars; second, twenty dollars. Double team.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Span of mules	Wm. R. Carpenter	Yuba City.
Horse and mule	Geo. Ohleyer, Jr.	Yuba City.
Two horses	Frank Grant	Marysville.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Mule team	Mule team
2. Horse team	Horse team
3. Horse and mule	Horse and mule

Time—11:35; 11:54; 12:43.

RACE No. 10—TROTTING.

Purse, four hundred dollars. Free for all. Four moneys. First horse, two hundred dollars; second, one hundred dollars; third, sixty dollars; fourth, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Flora G, by Altoona	James Dwain	Salinas City.
Hazel Kirk, by Brigadier	J. B. McDonald	Marysville.
Artist, by Golddust	J. R. Hodson	Sacramento.
Scandinavian, by Black Hawk	Peter Johnson	Santa Clara.
Alex Button, by Alexander	G. W. Woodard	Yolo.

RACE No. 10—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Flora G	Artist
2. Hazel Kirk	Alex Button
3. Artist	Flora G
4. Scandinavian	Scandinavian
5. Alex Button	Hazel Kirk

RACE No. 11—PACING.

Purse, four hundred dollars. Free for all. Four moneys. First horse, two hundred dollars; second, one hundred dollars; third, sixty dollars; fourth, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Arrow, by Richmond	Durfee & Covarrubias	Los Angeles.
Prince, by Missouri Chief	S. K. Trefry	Sacramento.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Arrow	Arrow
2. Prince	Prince

Time—2:26 $\frac{3}{4}$; 2:26; 2:27.

FRIDAY, SEPTEMBER 2, 1887.

RACE No. 12—TROTTING.

2:45 Class. Purse, two hundred dollars. Free for all. Four moneys. First horse, one hundred dollars; second, fifty dollars; third, thirty dollars; fourth, twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rose Mc, by Alex Button	G. W. Woodard	Yolo.
Manzanita, by Elmo	James Dwain	Salinas City.
Patchwork, by Brigadier	Charles Raish	Marysville.
Alpheus, by Mambrino Wilkes	A. L. Hinds	San Francisco.
Sutter Boy, by Echo	W. P. Harkey	Yuba City.
Brignolia, by Brigadier	P. Garrett	Chico.
Geronimo, by Inca	C. A. Durfee	Los Angeles.
Dolly Bloodstone, by Bullrush	N. N. Craig	Valley Springs.
Daisy A, by Friday McCracken	D. E. Knight	Marysville.
Major Mont, by Tilton Almont	C. H. Merrill	Willows.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Rose Mc	Geronimo
2. Manzanita	Manzanita
3. Patchwork	Rose Mc
4. Alpheus	Alpheus
5. Sutter Boy	All the others were distanced in the
6. Brignolia	first and second heats.
7. Geronimo	
8. Dolly Bloodstone	
9. Daisy A	
10. Major Mont	

Time—2:35 $\frac{1}{4}$; 2:27; 2:31; 2:28 $\frac{1}{2}$.

RACE No. 13—RUNNING.

Purse, two hundred dollars. Free for all. Four moneys. First horse, one hundred dollars; second, fifty dollars; third, thirty dollars; fourth, twenty dollars. Two-mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dave Douglas, by Leinster.....	Dan. Dennison	Sacramento.
Black Pilot, by Echo	J. H. Muse	Oakland.
Lige Clark, by Ballotbox.....	E. Daniels	Oakland.

*Position at Starting.**Position at Close.*

1. Dave Douglas	Dave Douglas.....	1
2. Black Pilot	Black Pilot	2
3. Lige Clark.....	Lige Clark	3

Time—3:40½.

RACE No. 14—RUNNING.

Purse, two hundred dollars. Free for all. First horse, one hundred dollars; second, fifty dollars; third, thirty dollars; fourth, twenty dollars. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jo Hamilton, by Clifton Bell	I. L. McDaniel	Biggs.
Daisy D, by Wheatley	James Dwain	Salinas.
Edwin F, by Norfolk	Dan. Dennison	Sacramento.
Emma T, by Scamperdown	A. C. Taylor	Gridley.
White Stockings, by Tom Atchison	George Simpson	Marysville.
Rackety Jack, by Ramadam	D. A. McAfee.....	Stockton.

*Position at Starting.**Position at Close.*

1. Jo Hamilton	Daisy D	1
2. Daisy D	Edwin F	2
3. Edwin F	Rackety Jack	3
4. Emma T	White Stockings	4
5. White Stockings	Emma T	5
6. Rackety Jack	Jo Hamilton	6

Time—1:46½.

SATURDAY, SEPTEMBER 3, 1887.

RACE No. 15—TROTTING.

2:30 Class. Purse, four hundred dollars. Free for all. First horse, two hundred dollars; second, one hundred dollars; third, sixty dollars; fourth, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Wallace G	P. Garrett	Chico.
Flora G	James Dwain	Salinas.
Rose S	R. C. Sargent	Sacramento.
Col. Hawkins	S. C. Tryon	Sacramento.
Hazel Kirk	J. B. McDonald.....	Marysville.

RACE No. 15—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Wallace G.....	Wallace G..... 1
2. Flora G.....	Flora G..... 2
3. Rose S.....	Col. Hawkins..... 3
4. Col. Hawkins.....	Rose S..... 4
5. Hazel Kirk.....	Hazel Kirk..... dis.

Time—2:29 $\frac{1}{4}$; 2:30; 2:26 $\frac{1}{2}$; 2:32; 2:30 $\frac{1}{2}$.

RACE No. 16—PACING.

2:30 Class. Purse, three hundred dollars. Free for all. First horse, one hundred and fifty dollars; second, seventy-five dollars; third, forty-five dollars; fourth, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Charley Brown, by Washington.....	James Dwain.....	Salinas.
Bracelet, by Nephew.....	J. R. Hodson.....	Sacramento.
Arrow, by Richmond.....	Durfee & Corarrubias.....	Los Angeles.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Charley Brown.....	Arrow..... 1 2 1 1
2. Bracelet.....	Bracelet..... 2 1 2 2
3. Arrow.....	Charley Brown..... dis.

Time—2:27; 2:25 $\frac{1}{4}$; 2:21; 2:28.

SPECIAL RACE—RUNNING.

Purse, fifty dollars. Agreed race for four horses. Three-quarter mile heats.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jo Hamilton.....	I. L. McDaniel.....	Biggs.
White Stockings.....	Geo. Simpson.....	Marysville.
Surprise.....	M. McCrimmon.....	Lincoln.
Lige Clark.....	Dan. Dennison.....	Sacramento.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Jo Hamilton.....	Lige Clark..... 1
2. White Stockings.....	Surprise..... 2
3. Surprise.....	White Stockings..... 3
4. Lige Clark.....	Jo Hamilton..... dis.

Time—1:21; 1:20.

TRANSACTIONS

OF THE

SIXTEENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the County of San Luis Obispo.

OFFICERS OF THE ASSOCIATION.

E. W. STEELE.....	President.
P. W. MURPHY.....	Vice-President.
J. H. BARRETT.....	Secretary.
R. E. JACK.....	Treasurer.

DIRECTORS.

E. W. STEELE.....	San Luis Obispo.
P. W. MURPHY.....	San Luis Obispo.
J. H. ORCUTT.....	San Luis Obispo.
L. M. WARDEN.....	San Luis Obispo.
E. LEEDHAM.....	Arroyo Grande.
J. V. WEBSTER.....	Creston.
GEORGE VAN GORDON.....	San Simeon.
J. D. FOWLER.....	Cayucos.

REPORT.

SAN LUIS OBISPO, December 1, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Sixteenth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

J. H. BARRETT, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Sale of privileges.....	\$325 00
Sale of privileges at Pavilion.....	15 00
Entrance money.....	331 00
Season tickets.....	490 50
Admission to Pavilion.....	642 55
Single admission to Park, including quarterstretch and grand stand..	1,168 00
State warrant.....	692 50
Donation from J. Wilhoit.....	5 00
Donation from N. H. Fitzwater.....	2 00
	<hr/>
	\$3,671 55

Expenditures.

Music for Park.....	\$120 00
Music for Pavilion.....	40 00
Electric Light Company, light for Pavilion.....	12 50
Hardie and Beckett, Commissioners with Exhibition to San Diego...	269 50
E. W. Steele, money advanced to Mr. Leedham, Commissioner to Mechanics' Fair, San Francisco.....	100 00
Premiums and purses.....	1,837 00
Printing, including seal and diplomas.....	147 75
Hay, feed, and hauling.....	118 58
Salaries and labor.....	379 80
Incidentals.....	52 88
Tickets redeemed.....	4 50
Balance cash on hand.....	589 04
	<hr/>
	\$3,671 55

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I.		
Black stallion, Al Allen	J. H. Orcutt	San Luis Obispo.
Black stallion, Billy Taylor	J. H. Hollister	San Luis Obispo.
Black stallion, Almont	Thomas Woods	San Luis Obispo.
Chestnut stallion, Barrellas	E. B. Ballard	Creston.
Dapple gray stallion, Crown Prince, Jr.	E. W. Steele	San Luis Obispo.
Iron-gray stallion	E. W. Steele	San Luis Obispo.
Bay mare and four colts	E. W. Steele	San Luis Obispo.
Iron-gray mare, Juno	E. W. Steele	San Luis Obispo.
Black mare, Sally	E. W. Steele	San Luis Obispo.
Bay mare, two years old	E. W. Steele	San Luis Obispo.
Suckling colt	E. W. Steele	San Luis Obispo.
Gelding, two years old	E. W. Steele	San Luis Obispo.
Bay mare, two years old	E. W. Steele	San Luis Obispo.
Iron-gray mare, two years old	E. W. Steele	San Luis Obispo.
Bay mare, one year old	E. W. Steele	San Luis Obispo.
Iron-gray mare, one year old	E. W. Steele	San Luis Obispo.
Gelding, two years old, Sam	R. S. Rainey	San Luis Obispo.
Bay mare	R. S. Rainey	San Luis Obispo.
Sorrel mare, Maud	R. S. Rainey	San Luis Obispo.
Brown stallion, Elect	R. S. Brown	San Luis Obispo.
Mare, four years old, Bettie	W. H. Ryan	Arroyo Grande.
Brown stallion, Enterprise	E. J. Price	Pismo.
Bay gelding, Billy	W. S. Richey	San Luis Obispo.
Bay stallion, Prince	W. H. Morton	Adelaide.
Iron-gray stallion, two years old, Duke McClellan, Jr.	M. H. Fitzwater	San Luis Obispo.
Bay stallion, one year old, Brutus	M. H. Fitzwater	San Luis Obispo.
Chestnut gelding, two years old	M. H. Fitzwater	San Luis Obispo.
Mare with four colts	M. H. Fitzwater	San Luis Obispo.
Brown filly, one year old, Nutwood	H. C. Petty	San Luis Obispo.
Mare, four years old, Nutwood, Jr.	H. C. Petty	San Luis Obispo.
Suckling colt	H. C. Petty	San Luis Obispo.
Bay stallion, Altoona	Geo. Steele	San Luis Obispo.
Bay stallion	Geo. Steele	San Luis Obispo.
Bay mare, Flora	Geo. Steele	San Luis Obispo.
Bay mare, Fanny	Geo. Steele	San Luis Obispo.
Bay mare, with suckling colt, Kate	Geo. Steele	San Luis Obispo.
Brown mare and colt, Puss	Geo. Steele	San Luis Obispo.
Suckling colt	Geo. Steele	San Luis Obispo.
Black gelding, two years old, Hoodlum	Geo. Steele	San Luis Obispo.
Sorrel gelding, two years old, Bonner	Geo. Steele	San Luis Obispo.
Iron-gray stallion, Stonewall	Wm. Morss	Cambria.
Black stallion, three years old, De Lesseps, Jr.	John Wilkinson	Huasna.
Span carriage horses	R. D. Orr	San Luis Obispo.
Buggy horse	R. D. Orr	San Luis Obispo.
Brown stallion, two years old, Chief	T. Andrews	San Luis Obispo.
Bay stallion, Belmont Chief	S. Leyons	Bitter Water.
Brown mare, Lena R	S. Leyons	Bitter Water.
Horse	P. F. Ready	San Luis Obispo.
Sorrel gelding, Earl	J. Mosher	San Luis Obispo.
Black mare, three years old, Belle	J. G. Pinho	San Luis Obispo.
Chestnut mare, San Luis Maid	P. W. Murphy	San Luis Obispo.
Bay stallion and four of his colts	P. W. Murphy	San Luis Obispo.
Bay mare with colt, Polly	P. W. Murphy	San Luis Obispo.
Stallion, Gaviota	P. W. Murphy	San Luis Obispo.
Colt	P. W. Murphy	San Luis Obispo.
Bay stallion, Tamboline	Geo. Van Gordon	San Simeon.
Stallion, Star	Geo. Van Gordon	San Simeon.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
Filly, two years old, Lilly	Geo. Van Gordon	San Simeon.
Stallion, one year old	Geo. Van Gordon	San Simeon.
Mare, one year old, Evelita	Geo. Van Gordon	San Simeon.
Buggy horse	Geo. Van Gordon	San Simeon.
Span buggy horses	T. Andrews	San Luis Obispo.
Brown gelding, three years old	L. M. Warden	San Luis Obispo.
Mare, four years old and over, with colt	L. M. Warden	San Luis Obispo.
Mare with four colts	L. M. Warden	San Luis Obispo.
Gelding, two years old	L. M. Warden	San Luis Obispo.
Stallion, Monroe S	Brown & Taylor	San Luis Obispo.
Filly, two years old, Miss Monroe	Brown & Taylor	San Luis Obispo.
Black mare, four years old, Lady Thorn	Brown & Taylor	San Luis Obispo.
Mare, Lady Stewart	John Pennington	San Luis Obispo.
Stallion, Sir Edgerton	E. Watkins	San Luis Obispo.
Gelding, three years old, Prince	P. Donohue	San Luis Obispo.
Mare, two years old	P. Donohue	San Luis Obispo.
Gray stallion, Bayard	P. Kelly	San Luis Obispo.
Black mare, Jane	P. Kelly	San Luis Obispo.
Filly, Stella C	E. W. Steele	San Luis Obispo.
Stallion, four years old and over, with colts, Duke McClellan	W. H. Taylor	San Luis Obispo.
Mare, four years old and over, with colts, Lady Tiffany	Brown & Taylor	San Luis Obispo.
Suckling colt	Brown & Taylor	San Luis Obispo.
Span mares, Cleal and Jessie	Ernest Graves	San Luis Obispo.
Gray mare, Fanny	Geo. Gates	San Luis Obispo.
CLASS II.		
Holstein bull, three years old	E. W. Steele	San Luis Obispo.
Holstein bull, one year old, Duke of Obispo	E. W. Steele	San Luis Obispo.
Holstein bull, one year old, Omaha	E. W. Steele	San Luis Obispo.
Holstein bull calf	E. W. Steele	San Luis Obispo.
Holstein cow, four years old	E. W. Steele	San Luis Obispo.
Holstein cow, three years old	E. W. Steele	San Luis Obispo.
Holstein cow, two years old	E. W. Steele	San Luis Obispo.
Holstein calf	E. W. Steele	San Luis Obispo.
Jersey cow	E. W. Steele	San Luis Obispo.
Herd of cattle	E. W. Steele	San Luis Obispo.
Devon bull	George Van Gordon	San Simeon.
Durham bull, two years old	H. M. Warden	San Luis Obispo.
Durham bull calf	H. M. Warden	San Luis Obispo.
Durham cow, four years old	H. M. Warden	San Luis Obispo.
Durham cow, four years old	H. M. Warden	San Luis Obispo.
Durham heifer calf	H. M. Warden	San Luis Obispo.
Three yearling Holsteins, thoroughbred	E. W. Steele	San Luis Obispo.
Holstein heifer calf, thoroughbred	E. W. Steele	San Luis Obispo.
Three suckling calves, half Jersey, half Holstein	E. W. Steele	San Luis Obispo.
Two suckling calves, Holstein	E. W. Steele	San Simeon.
Hereford bull, two years old	George Van Gordon	San Simeon.
Hereford cow, three years old	George Van Gordon	San Simeon.
Hereford cow, two years old	George Van Gordon	San Simeon.
Hereford yearling	George Van Gordon	San Simeon.
Hereford calf	George Van Gordon	San Simeon.
Herd cattle	George Van Gordon	San Simeon.

PREMIUMS AWARDED—1887

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I—ROADSTERS.			
Stallion, Al. Allen	J. H. Orcutt	San Luis Obispo	---\$10 00
Stallion, Barrellas	E. B. Ballard	Creston	---\$10 00
Stallion, Elect	R. S. Brown	San Luis Obispo	---\$10 00
Stallion, Prince	W. H. Morton	Adelaide .....	.....
Stallion, Tamboline	Geo. Van Gordon	San Simeon .....	.....
Stallion, Monroe S	Brown & Taylor	San Luis Obispo .....	.....
Stallion, Enterprise	E. J. Price	Pizmo	---\$10 00
Mare Bettie, four years	W. H. Ryan	Arroyo Grande .....	.....
Mare, Flora	George Steele	San Luis Obispo .....	.....
Mare, Fannie	George Steele	San Luis Obispo .....	.....
Mare, Luis Maid	P. W. Murphy	Santa Margarita .....	.....
Mares, Cleal and Jessie	Ernest Graves	San Luis Obispo	---\$10 00
Mare, Evelita	Geo. Van Gordon	San Simeon	---\$10 00
Stallion, three years	P. Donohue	San Luis Obispo .....	.....
Mares, two years and over	P. Donohue	San Luis Obispo .....	.....
Mare, Laura R	S. Leyons	Bitter Water .....	.....
Stallion, Altoona	George Steele	San Luis Obispo .....	.....
Stallion, Dude	Geo. Van Gordon	San Simeon	---\$7 50
HORSES FOR ALL PURPOSES.			
Stallion, Billy Taylor	J. H. Hollister	San Luis Obispo .....	.....
Stallion, Crown Prince, Jr.	E. W. Steele	San Luis Obispo	---\$15 00
Stallion, Duke McClellan, four years, with colt	W. H. Taylor	San Luis Obispo .....	.....
Stallion, Brutus, one year	N. H. Fitzwater	San Luis Obispo .....	.....
Stallion, Chief, two years	T. Andrews	San Luis Obispo	---\$10 00
Stallion, Gaviota	P. W. Murphy	Santa Margarita .....	.....
Stallion, Star	Geo. Van Gordon	San Simeon .....	.....
Stallion, one year	Geo. Van Gordon	San Simeon .....	.....
Sucking colt	E. W. Steele	San Luis Obispo	---\$5 00
Mare, two years	E. W. Steele	San Luis Obispo	---\$7 50
Mare, Fanny, three years	George Gates	San Luis Obispo	---\$15 00
Mare, one year	Geo. Van Gordon	San Simeon .....	.....
Mare, one year	F. W. Steele	San Luis Obispo .....	.....
Mare, Maud	R. S. Rainey	San Luis Obispo .....	.....
Colt	P. W. Murphy	Santa Margarita .....	.....
Filly, two years	Geo. Van Gordon	San Simeon .....	.....
Filly, Nutwood, one year	H. C. Petty	San Luis Obispo .....	.....
Filly, Miss Monroe, two years	Brown & Taylor	San Luis Obispo .....	.....
Belmont Chief	S. Leyons	Bitter Water .....	.....
GELDINGS.			
Gelding, three years	L. M. Warden	San Luis Obispo	---\$15 00
Gelding, two years	H. M. Warden	San Luis Obispo	---\$7 50
Gelding, Hoodlum, two years	George Steele	San Luis Obispo .....	.....
Gelding, Bonner, two years	George Steele	San Luis Obispo .....	.....
Gelding, Earl, three years	J. Mosher	San Luis Obispo .....	.....
MARES AND COLTS.			
Lady Tiffany, four years, and colt	Brown & Taylor	San Luis Obispo	---\$10 00
Mare, three years, and colt	E. W. Steele	San Luis Obispo	---\$7 50
Mare, with four colts	N. H. Fitzwater	San Luis Obispo .....	.....
Mare, four years and over, with colt	H. C. Petty	San Luis Obispo .....	.....
Mare, Puss, and colt	Geo. Steele	San Luis Obispo .....	.....
Mare, Polly, and colt	P. W. Murphy	Santa Margarita .....	.....
Suckling colt, Nutwood, Jr.	H. C. Petty	San Luis Obispo .....	.....
Mare, with four colts	E. W. Steele	San Luis Obispo .....	.....

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
Four mares, each with colts by Gaviota.	P. W. Murphy	Santa Margarita	\$15 00
Lady Thorn, four years, and colt	Brown & Taylor	San Luis Obispo	
Mare	John Pennington	San Luis Obispo	
Miss Monroe, two years	Brown & Taylor	San Luis Obispo	
Belle, three years	J. G. Pinho	San Luis Obispo	
Maud	R. S. Rainey	San Luis Obispo	
Katie, with suckling colt	George Steele	San Luis Obispo	
Mare, four years old and over, with colt	H. M. Warden	San Luis Obispo	
Mare, with four colts	H. M. Warden	San Luis Obispo	
Best mare, two years	Geo. Van Gordon	San Simeon	\$5 00
Best mare, one year	E. W. Steele	San Luis Obispo	\$5 00
DRAFT HORSES.			
Stallion, four years old	E. W. Steele	San Luis Obispo	
Stallion, Stonewall	William Morss	Cambria	
Stallion, three years old, De Lesseps, Jr.	John Wilkinson	Huasna	\$5 00
Stallion, three years old, Bayard	P. Kelly	San Luis Obispo	\$10 00
Gelding, two years old, Sam	R. S. Rainey	San Luis Obispo	
Mare, two years old, Sally	E. W. Steele	San Luis Obispo	\$10 00
Mare, three years old, Sally	E. W. Steele	San Luis Obispo	
Mare, three years old, Juno	E. W. Steele	San Luis Obispo	
Mare, two years old	R. S. Rainey	San Luis Obispo	
Suckling colt	E. W. Steele	San Luis Obispo	\$5 00
Gelding, two years old	E. W. Steele	San Luis Obispo	
Mare	E. W. Steele	San Luis Obispo	\$7 50
Suckling colt	E. W. Steele	San Luis Obispo	\$5 00
CARRIAGE HORSES.			
Span of horses	R. D. Orr	San Luis Obispo	
Span of horses	Truman Andrews	San Luis Obispo	\$10 00
Gelding, Billy	W. S. Richey	San Luis Obispo	
Buggy horse	R. D. Orr	San Luis Obispo	
Buggy horse	Geo. Van Gordon	San Simeon	
Single buggy horse	J. R. Mosher	San Luis Obispo	\$7 50
SWEEPSTAKES.			
Stallion, Al. Allen, with colts	J. H. Orcutt	San Luis Obispo	
Stallion, Almont	Thomas Woods	San Luis Obispo	
Stallion, Altoona, with family	George Steele	San Luis Obispo	\$15 00
Stallion, Crown Prince, Jr.	E. W. Steele	San Luis Obispo	
Stallion, Enterprise	E. J. Price	San Luis Obispo	
Stallion, Gaviota	P. W. Murphy	Santa Margarita	\$10 00
Stallion, Sir Edgerton	E. Watkins	San Luis Obispo	
Stallion, four years old, Duke McClellan, with colts	W. H. Taylor	San Luis Obispo	
Mare, with four colts	N. H. Fitzwater	San Luis Obispo	
Mare, Jane	P. Kelly	San Luis Obispo	
Mare, Lady Tiffany	Brown & Taylor	San Luis Obispo	\$10 00
Filly, Stella C	E. W. Steele	San Luis Obispo	
Suckling colt	H. C. Petty	San Luis Obispo	
Stallion, Gaviota, with family	P. W. Murphy	Santa Margarita	\$10 00
Gelding	George Gates	San Luis Obispo	\$10 00
Mare, Princess, with family	H. M. Warden	San Luis Obispo	\$15 00
Colt, Alteal, by Antevola	W. H. Taylor	San Luis Obispo	\$5 00
Stallion, one year old, Monroe S.	Brown & Taylor	San Luis Obispo	
Stallion, Belmont Chief	S. Leyons	Bitter Water	
Mare, Lena R.	S. Leyons	Bitter Water	
Stallion, three years old, Prince	W. H. Taylor	San Luis Obispo	
CLASS II—CATTLE—HOLSTEINS.			
Bull, three years old and over	E. W. Steele	San Luis Obispo	
Bull, Duke of Obispo	E. W. Steele	San Luis Obispo	\$5 00
Bull calf, Omaha	E. W. Steele	San Luis Obispo	\$5 00
Cow, four years old	E. W. Steele	San Luis Obispo	\$5 00
Cow, three years old	E. W. Steele	San Luis Obispo	\$5 00
Cow, two years old	E. W. Steele	San Luis Obispo	\$5 00
Calf	E. W. Steele	San Luis Obispo	\$3 00
Herd of cattle	E. W. Steele	San Luis Obispo	\$10 00
Heifer calf	E. W. Steele	San Luis Obispo	\$5 00

FIRST DEPARTMENT--Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Three head of suckling calves, one half Holstein, and one half Jersey	E. W. Steele	San Luis Obispo.	\$5 00
Two suckling calves.	E. W. Steele	San Luis Obispo.	\$3 00
CLASS III--JERSEY.			
Jersey cow	E. W. Steele	San Luis Obispo.	\$5 00
Best breed of Jersey bull calf.	E. W. Steele	San Luis Obispo.	\$5 00
CLASS IV--HEREFORDS.			
Bull, two years old and over.	Geo. Van Gordon	San Simeon.	\$5 00
Cow, three years old and over	Geo. Van Gordon	San Simeon.	\$5 00
Cow, two years old and over.	Geo. Van Gordon	San Simeon.	\$5 00
Yearling	Geo. Van Gordon	San Simeon.	\$5 00
Calf	Geo. Van Gordon	San Simeon.	\$3 00
Second best herd of cattle	Geo. Van Gordon	San Simeon.	\$10 00
CLASS V--CATTLE--DURHAMS.			
Bull, two years old	H. M. Warden	San Luis Obispo.	\$10 00
Bull calf	H. M. Warden	San Luis Obispo.	\$5 00
Cow, four years old and over.	H. H. Warden	San Luis Obispo.	\$10 00
Cow, four years old and over.	H. M. Warden	San Luis Obispo.	\$5 00
Cow, two years old and over.	H. M. Warden	San Luis Obispo.	\$7 50
POULTRY.			
Langshans	C. B. Hughston	San Luis Obispo.	\$2 00
CLASS III--MANUFACTURES.			
Skeleton road wagon	P. F. Ready	San Luis Obispo.	\$5 00
Spring wagon	P. Kaetzel	San Luis Obispo.	\$5 00
Spring wagon	E. J. Kay	San Luis Obispo.	\$3 00
Single plow	E. J. Kay	San Luis Obispo.	\$5 00
Gang plow	E. J. Kay	San Luis Obispo.	\$5 00
Best display of mechanical dentistry	W. S. Richey	San Luis Obispo.	Diploma.
Buggy harness, double	J. P. Hoefer	San Luis Obispo.	\$5 00
Buggy harness, single	J. P. Hoefer	San Luis Obispo.	\$5 00
Ladies' saddle	J. P. Hoefer	San Luis Obispo.	\$3 00
Gents' saddle.	J. P. Hoefer	San Luis Obispo.	\$3 00
CLASS I--FARM PRODUCTS.			
Best sack of barley	W. A. Conrad	Arroyo Grande	\$2 50
Best sack of corn	E. A. Atwood	San Luis Obispo.	\$2 50
Best sack of flax	J. V. Webster	Creston	\$2 50
Best sack of hops	J. V. Webster	Creston	\$2 50
Best collection forage plants	J. V. Webster	Creston	Diploma.
Mammoth corn	John Edgar	San Luis Obispo.	
Yellow Dent corn	E. A. Atwood	San Luis Obispo.	
Native grains	J. V. Webster	Creston	
Pop corn	J. Tognazzini	Cayucos	
Best exhibit hams	S. L. O. Packing Co.	San Luis Obispo.	\$2 50
Best exhibit bacon	S. L. O. Packing Co.	San Luis Obispo.	\$2 50
Best exhibit ten pounds lard	S. L. O. Packing Co.	San Luis Obispo.	\$2 50
Best exhibit pickled olives.	Mrs. Newsom	Arroyo Grande	\$2 50
GARDEN PRODUCTS.			
Largest general display of fruit and vegetables	Arroyo Grande Agricul. Ass'n	Arroyo Grande.	Diploma.
Display of potatoes	George C. Cocke	San Luis Obispo.	
Display of tomatoes	J. P. Andrews	San Luis Obispo.	
Display of two pumpkins	John Edgar	San Luis Obispo.	
Display of beans	John Edgar	San Luis Obispo.	
Display of cabbage	John Edgar	San Luis Obispo.	
Display of watermelons	Mrs. Lowther	Oak Park	\$1 00
Exhibit red peppers	J. Tognazzini	Cayucos	
Exhibit tomatoes	Mrs. Huick	San Luis Obispo.	
Exhibit tomatoes	E. W. Steele	San Luis Obispo.	
Exhibit peerless potatoes	Girard Jasper	San Luis Obispo.	
Exhibit Burbank seedling potatoes	Girard Jasper	San Luis Obispo.	
Exhibit monster red peppers	Girard Jasper	San Luis Obispo.	Diploma.
Exhibit rhubarb.	Girard Jasper	San Luis Obispo.	

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Exhibit celery	Girard Jasper	San Luis Obispo	
Exhibit three boxes tomatoes	Girard Jasper	San Luis Obispo	
Exhibit one box Arlington tomatoes	Girard Jasper	San Luis Obispo	
Exhibit one box Livingston tomatoes	Girard Jasper	San Luis Obispo	
Exhibit Cuban green watermelons	Girard Jasper	San Luis Obispo	
Exhibit cantaloupes	Girard Jasper	San Luis Obispo	
Exhibit Chili garnet potatoes	George Mead	San Luis Obispo	
Exhibit Chili garnet potatoes	M. Gilbert	Moro	\$1 00
Exhibit Burbank seedling potatoes	M. Gilbert	Moro	\$1 00
Exhibit Jersey blue potatoes	M. Gilbert	Moro	\$1 00
Exhibit Salt Lake potatoes	M. Gilbert	Moro	
Exhibit of cauliflower	M. Gilbert	Moro	
Exhibit of cabbage	W. J. McGinnis	San Luis Obispo	
Exhibit of sauer kraut	W. J. McGinnis	San Luis Obispo	
Exhibit of cauliflower	W. J. McGinnis	San Luis Obispo	
Exhibit of peerless potatoes	Mark Elberg	San Luis Obispo	\$1 00
Exhibit of sweet potatoes	J. V. N. Young	Arroyo Grande	\$1 00
Exhibit of cabbage	J. V. N. Young	Arroyo Grande	\$1 00
Exhibit of carrots	J. V. N. Young	Arroyo Grande	Diploma.
Exhibit of onions, different varieties	J. V. N. Young	Arroyo Grande	\$1 00
Exhibit of white beans	O. Root	Root's Station	\$1 00
Exhibit of pink beans	J. G. Stephenson	Arroyo Grande	\$1 00
Exhibit of black Spanish melons	T. Milan	Arroyo Grande	\$1 00
Exhibit of hubbard squash	S. M. Finley	Arroyo Grande	Diploma.
Exhibit of butman squash	S. M. Finley	Arroyo Grande	Diploma.
Exhibit of cocoanut squash	S. M. Finley	Arroyo Grande	\$1 00
Exhibit of kershaw squash	J. V. Webster	Creston	Diploma.
Exhibit of crookneck squash	Conrad Greib	Arroyo Grande	Diploma.
Exhibit of Yokohama squash	J. Gregory	San Luis Obispo	Diploma.
Exhibit of six squash, weight, 1,124 lbs.	T. B. Records	Arroyo Grande	Diploma.
Exhibit of one squash, weight, 216 lbs.	T. B. Records	Arroyo Grande	Diploma.
Exhibit of pumpkins	G. O. Taylor	San Luis Obispo	\$1 00
Exhibit of cauliflower	A. B. Hasbrouck	Musick	\$1 00
Exhibit of cucumbers	G. O. Taylor	San Luis Obispo	\$1 00
Exhibit of danoca onions	W. E. Ahalt	Arroyo Grande	Diploma.
Exhibit of Chinese radish	T. B. Records	Arroyo Grande	\$1 00
Exhibit of Spanish radish	John McGlashan	Arroyo Grande	\$1 00
Exhibit of rutabaga turnips	J. D. Roberts	Arroyo Grande	\$1 00
Exhibit of beets	J. D. Roberts	Arroyo Grande	Diploma.
Exhibit of peas	J. G. Stephenson	Arroyo Grande	Diploma.
Exhibit of monarch peas	J. Gregory	San Luis Obispo	Diploma.
Exhibit of tomatoes	Mrs. Huick	San Luis Obispo	\$1 00
Exhibit of peaches	J. C. Wilson	San Luis Obispo	
Best collection of various kinds of fruit.	J. P. Andrews	San Luis Obispo	\$5 00
Exhibit of olives	D. S. Newsome	Arroyo Grande	
Exhibit of lemons	D. S. Newsome	Arroyo Grande	
Exhibit of fine cluster of grapes	Judge Gregory	San Luis Obispo	
Exhibit of sample pears	Judge Gregory	San Luis Obispo	
Exhibit of sample plums	Judge Gregory	San Luis Obispo	\$2 00
Exhibit of twelve plates of apples	George Joy	San Luis Obispo	
Exhibit of two plates of pears	George Joy	San Luis Obispo	
Exhibit of ten plates of apples	Wm. Joy	San Luis Obispo	
Exhibit of grapes	Mrs. J. E. Kester	Cayucos	
Exhibit of lemons	W. E. Stewart	San Luis Obispo	
Exhibit of four boxes of apples	E. A. Atwood	San Luis Obispo	\$5 00
Exhibit of one box of pears	E. A. Atwood	San Luis Obispo	
Exhibit of three boxes of grapes	E. A. Atwood	San Luis Obispo	
Exhibit of one lot of figs	E. A. Atwood	San Luis Obispo	
Exhibit of twenty-three varieties apples	W. H. Taylor	San Luis Obispo	\$7 50
Exhibit of ten varieties of pears	W. H. Taylor	San Luis Obispo	
Exhibit of three lots of peaches	W. H. Taylor	San Luis Obispo	
Exhibit of one lot of almonds	W. H. Taylor	San Luis Obispo	
Exhibit of one box of strawberries	W. H. Taylor	San Luis Obispo	
Exhibit of seven lots of apples	Mrs. J. B. Hazen	San Luis Obispo	
Exhibit of one lot of peaches	Lazcurro Bros.	San José	\$2 50
Exhibit of two lots of pears	Mrs. J. H. Orcutt	San Luis Obispo	\$1 00
Exhibit of five lots of apples	Mrs. McD. R. Venable	San Luis Obispo	
Exhibit of one lot of almonds	Mrs. McD. R. Venable	San Luis Obispo	\$5 00

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Exhibit of one basket of lemons	Herman Mehlman	San Luis Obispo.	.....
Exhibit of one lot of apples	A. Porter	Huasna	.....
Exhibit of four lots of peaches	J. C. Wilson	Paso Robles	.....
Exhibit of one lot of apples	Bean Bros.	San Luis Obispo.	.....
Exhibit of one lot of grapes	Bean Bros.	San Luis Obispo.	.....
Two varieties of foreign grapes	Dr. W. W. Hays	San Luis Obispo.	\$2 50
Eight lots of apples	C. W. Howe	Moro	.....
One lot of pears	O. W. Howe	Moro	.....
One lot of apples	A. M. Hardie	Cayucos	.....
One lot of pears	A. M. Hardie	Cayucos	.....
One lot of apples	J. B. Rigdon	San Luis Obispo.	.....
One lot of pears	J. B. Rigdon	San Luis Obispo.	.....
Five lots of apples	H. M. Warden	San Luis Obispo.	.....
One lot of pears	H. M. Warden	San Luis Obispo.	.....
One lot of lemons	H. M. Warden	San Luis Obispo.	.....
One lot of oranges	H. M. Warden	San Luis Obispo.	.....
Seven lots of apples	O. Root	San Luis Obispo.	.....
One lot of apples	Jas. Middlemast	Cayucos	.....
Two varieties of grapes	N. J. Hazard	Cayucos	.....
One lot of lemons	A. Toguazina	Cayucos	.....
Two varieties of apples	P. Toguazina	Cayucos	.....
One variety of strawberries	F. Toguazina	Cayucos	.....
One lot of oranges	Dr. A. R. Hathway	San Luis Obispo.	.....
One lot of almonds	Dr. A. R. Hathway	San Luis Obispo.	.....
One lot of Sharpless strawberries	Girard Jasper	San Luis Obispo.	\$1 00
One lot of Queen strawberries	Girard Jasper	San Luis Obispo.	.....
One lot of blackberries	Girard Jasper	San Luis Obispo.	.....
One bunch of strawberries	Girard Jasper	San Luis Obispo.	.....
One box of strawberries	Girard Jasper	San Luis Obispo.	.....
One box of blackberries	Girard Jasper	San Luis Obispo.	.....
One box of raspberries	Girard Jasper	San Luis Obispo.	.....
Foreign grapes	J. V. Webster	Creston	\$2 50
Wine grapes	J. V. Webster	Creston	.....
Mexican limes	W. J. McGinnis	San Luis Obispo.	.....
Three varieties of apples	Dr. A. R. Hathway	San Luis Obispo.	.....
One variety of quinces	Dr. A. R. Hathway	San Luis Obispo.	.....
One lot of quinces	U. Porter	San Luis Obispo.	.....
One lot of raspberries	U. Porter	San Luis Obispo.	.....
One lot of Belleflower apples	E. W. Steele	San Luis Obispo.	.....
One lot of apples	E. W. Steele	San Luis Obispo.	.....
One lot of apples	James Taylor	San Luis Obispo.	.....
One lot of nectarines	Mrs. E. W. Steele	San Luis Obispo.	\$1 00
Best exhibit of lemons	A. M. Hardie	Cayucos	\$3 75
Best exhibit of oranges	R. Leedham	Arroyo Grande	\$3 75
Best exhibit of quinces	H. J. Price	Arroyo Grande	\$1 00
Best exhibit of persimmons	W. H. Finley	Arroyo Grande	\$1 00
Best collection of apples (not less than twelve varieties)	J. F. Beckett	Arroyo Grande	\$5 00
Best exhibit of crabapples	J. F. Beckett	Arroyo Grande	\$1 00
Best exhibit of blackberries	Mrs. J. V. N. Young	Arroyo Grande	\$1 00
Lot of grapes	Mrs. J. E. Kester	Cayucos	.....
Lot of lemons	W. E. Stewart	San Luis Obispo.	.....
Twelve varieties of apples	U. Porter	San Luis Obispo.	.....
CANNED FRUITS.			
Collection of jellies in glass	Mary M. Newsome	Arroyo Grande	.....
One dozen assorted jellies in glass	Mrs. H. M. Warden	San Luis Obispo.	\$2 50
Ten jars assorted jellies in glass	Mrs. M. Motz	San Luis Obispo.	.....
Collection of fruit sealed in glass	Mrs. J. C. Stocking	Moro	\$5 00
Sweet pickles in glass	Mrs. J. C. Stocking	Moro	\$1 50
Collection of preserves in glass	Mrs. J. C. Stocking	Moro	\$5 00
Collection of jellies in glass	Mrs. J. C. Stocking	Moro	.....
Collection of jellies	Mrs. J. H. Orcutt	San Luis Obispo.	\$1 00
Seven glasses of jellies	Mrs. F. W. Vetter- line	San Luis Obispo.	.....
DRIED FRUITS.			
Exhibit of peaches	E. W. Steele	San Luis Obispo.	\$2 00
Exhibit of apples	E. W. Steele	San Luis Obispo.	\$2 00
Exhibit of nectarines	E. W. Steele	San Luis Obispo.	Spe. men.
Exhibit of apricots	E. W. Steele	San Luis Obispo.	\$2 00

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
PLANTS AND FLOWERS.			
Best exhibit of hot-house plants	Mrs. Robbins	San Luis Obispo	Diploma.
Best exhibit of hardy ornamental evergreens	Mrs. J. B. Hazen	San Luis Obispo	Diploma.
Best exhibit of fuchsias	Miss Bouldin	San Luis Obispo	Diploma.
Best exhibit of cut roses and dahlias	Mrs. R. E. Jack	San Luis Obispo	Diploma.
Best exhibit of leaf plants	Mrs. C. R. Brumley	San Luis Obispo	Diploma.
Best exhibit of lilies	Mrs. J. H. Orcutt	San Luis Obispo	Spe. men.
Best exhibit of hand bouquets	Miss Sinsheimer	San Luis Obispo	Diploma.
Best exhibit of parlor bouquets	Miss Leland	San Luis Obispo	Diploma.
Best exhibit of vase bouquets	Mrs. Spencer	San Luis Obispo	Diploma.
Best exhibit of gloria mundi	U. Porter	San Luis Obispo	.....
NATIVE WINES AND LIQUORS.			
Best exhibit of wines	Dr. W. W. Hays ..	San Luis Obispo	.....\$5 00
FINE ARTS.			
Exhibit of painted table cover	Miss Maggie Grieb	San Luis Obispo	.....
Exhibit of kensington painting	Mrs. H. E. McBride	San Luis Obispo	.....
Exhibit of china painting	Miss Cora Russell	San Luis Obispo	.....
Exhibit of oil painting	Miss N. Ware	San Luis Obispo	.....
Exhibit of oil painting	Miss I. Childs	San Luis Obispo	.....3d dip.
Exhibit of oil painting	Benjamin Brooks	San Luis Obispo	.....4th dip.
Exhibit of painting on china	Miss Canon	San Luis Obispo	.....1st dip.
Exhibit of painting on china	Miss H. Fillmore	San Luis Obispo	.....2d dip.
Exhibit of painting on china	Miss Maggie Grieb	San Luis Obispo	Spe. men.
Exhibit of water colors	Mrs. E. W. Steele ..	San Luis Obispo	Diploma.
Exhibit of India ink sketches	Miss L. V. V. Baker	San Luis Obispo	Diploma.
Exhibit of crayon drawing	John G. Cleal	San Luis Obispo	Diploma.
Exhibit of best collection of oil paintings	Mrs. L. H. Simmons ..	San Luis Obispo	Diploma.
Exhibit of painted fire screen	Mrs. Nourse	San Luis Obispo	Spe. men.
Exhibit of etching on copper	Mrs. E. W. Steele ..	San Luis Obispo	Spe. men.
Exhibit of two pictures	Mrs. L. M. Moore ..	San Luis Obispo	.....
Exhibit of seven oil paintings	Miss Cora Russell ..	San Luis Obispo	.....2d dip.
DAIRY PRODUCE.			
Exhibit of butter	Mrs. J. C. Stocking ..	Moro .....	.....
Exhibit of four rolls butter	J. Wilhoit	San Luis Obispo	.....\$5 00
Exhibit of one box butter	Hollister & Bossi ..	San Luis Obispo	.....
Exhibit of twelve cheese	P. O' Connor	San Luis Obispo	.....
Exhibit of cheese	E. W. Steele	San Luis Obispo	.....\$5 00
Exhibit of one box butter	John Farrini	Cayucos .....	.....
BREAD AND PASTRY.			
Best exhibit of bread	Mrs. C. R. Brumley ..	San Luis Obispo	.....\$3 00
Best exhibit of bread by a miss under eighteen years	Miss C. R. Wurch ..	San Luis Obispo	.....\$3 00
MILLINERY.			
Best exhibit of millinery	Mrs. J. C. Spinney ..	San Luis Obispo	Diploma.
Exhibit of millinery	Mrs. E. W. Finney ..	San Luis Obispo	.....
EMBROIDERY, NEEDLE, AND FANCY WORK.			
Rag carpet	Mrs. R. T. Spurgeon ..	San Luis Obispo	.....\$3 00
Suit child's clothes	Mrs. R. T. Spurgeon ..	San Luis Obispo	.....\$2 50
Raw silk	Mrs. R. T. Spurgeon ..	San Luis Obispo	.....\$10 00
Seed wreath	Mrs. J. C. Stocking ..	Moro .....	.....\$1 50
Worsted sofa cushion	Mrs. J. C. Stocking ..	Moro .....	.....
Two frames wax work	Mrs. J. C. Stocking ..	Moro .....	.....\$2 00
Shell and moss work	Mrs. J. C. Stocking ..	Moro	Diploma.
Tufted rug	Mrs. J. C. Stocking ..	Moro .....	.....
Tufted oyster shell	B. B. Pierce	Estella .....	.....
Hat crown	Mrs. J. S. Price	San Luis Obispo	.....
Banner	Mrs. J. S. Price	San Luis Obispo	.....
Table scarf	Mrs. J. S. Price	San Luis Obispo	.....
Fire-screen, arasene work	Mrs. J. S. Price	San Luis Obispo	Diploma.
Spanish handkerchief	Mrs. J. J. Simmler ..	San Luis Obispo	.....
Three pieces Spanish lace work	Mrs. J. J. Simmler ..	San Luis Obispo	Diploma.
Crochet robe	Miss M. Barnett	Arroyo Grande ..	.....
Knitting	Mrs. C. Snyder	San Luis Obispo	.....\$1 00

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Silk quilt.....	Mrs. S. A. Lawton.....	Templeton.....	
Crazy quilt.....	Mrs. S. A. Lawton.....	Templeton.....	
Pillow sham.....	Mrs. S. A. Lawton.....	Templeton.....	\$1 00
Sofa pillow.....	Mrs. S. A. Lawton.....	Templeton.....	
Piano cover.....	Mrs. R. F. Pettit.....	San Luis Obispo.....	\$2 00
Hair work.....	Mrs. Van Duzen.....	San Luis Obispo.....	\$2 00
Dying work.....	Mrs. Van Duzen.....	San Luis Obispo.....	
Cotton patchwork quilt.....	Mrs. L. M. Moore.....	San Luis Obispo.....	
Two silk quilts.....	Mrs. L. M. Moore.....	San Luis Obispo.....	
Cambric embroidery.....	Mrs. L. M. Moore.....	San Luis Obispo.....	
Afghan, worsted.....	Mrs. R. E. Jack.....	San Luis Obispo.....	
Handkerchief box.....	Miss Minnie Egan.....	San Luis Obispo.....	
Pincushion.....	Miss Minnie Egan.....	San Luis Obispo.....	
Set of table mats.....	Miss Minnie Egan.....	San Luis Obispo.....	
Embroidered table cover.....	Miss Minnie Egan.....	San Luis Obispo.....	\$2 00
Chenille portfolio.....	Miss Maggie Grieb.....	San Luis Obispo.....	
Knitted hood.....	Miss Maggie Grieb.....	San Luis Obispo.....	
Afghan.....	Miss M. C. Day.....	San Luis Obispo.....	\$2 00
Silk stockings.....	Miss M. C. Day.....	San Luis Obispo.....	
Twine ball and scissor pocket.....	Miss M. C. Day.....	San Luis Obispo.....	\$1 00
Knit lace.....	Mrs. H. M. Warden.....	San Luis Obispo.....	
Two crochet tidies.....	Mrs. J. B. Hazen.....	San Luis Obispo.....	
Hand knit lace.....	Mrs. J. B. Hazen.....	San Luis Obispo.....	
Sea moss.....	Mrs. J. B. Hazen.....	San Luis Obispo.....	
Pincushion.....	Mrs. J. Motz.....	San Luis Obispo.....	
Chenille chair tidy.....	Mrs. J. Motz.....	San Luis Obispo.....	
Embroidered table cover.....	Mrs. Geo. McCabe.....	San Luis Obispo.....	
Two tufted rugs.....	Mrs. Geo. McCabe.....	San Luis Obispo.....	\$2 00
One worsted quilt.....	Mrs. Geo. McCabe.....	San Luis Obispo.....	
Silk cloth, California manufacture.....	Mrs. R. T. Spurgeon.....	San Luis Obispo.....	\$5 00
Stamping.....	Mrs. J. T. Spurgeon.....	San Luis Obispo.....	
Stamping chair tidy.....	Miss L. Spurgeon, aged 7 years.....	San Luis Obispo.....	Diploma.
Embroidered set hand-made lace.....	Miss N. Brumley.....	San Luis Obispo.....	\$1 00
Feather fan.....	Mrs. J. H. Orcutt.....	San Luis Obispo.....	\$1 00
Foot rest.....	Mrs. L. Kaiser.....	San Luis Obispo.....	
Silk embroidered skirt.....	Mrs. H. C. Pettit.....	San Luis Obispo.....	
Silk embroidered book marks.....	Mrs. H. C. Pettit.....	San Luis Obispo.....	
Silk embroidered handkerchief.....	Mrs. H. C. Pettit.....	San Luis Obispo.....	
Pair of knit mittens.....	Mrs. H. C. Pettit.....	San Luis Obispo.....	
Two knit dolls.....	Mrs. H. C. Pettit.....	San Luis Obispo.....	
One child's dress.....	Miss C. Shank.....	San Luis Obispo.....	\$2 50
One crazy scarf.....	Miss Belle Hinds.....	San Luis Obispo.....	
Penmanship.....	Miss Louan Hinds, under 13 yrs. old.....	San Luis Obispo.....	Diploma.
Knit lace.....	Mrs. J. H. Barrett.....	San Luis Obispo.....	\$1 00
Cambric embroidered handkerchief.....	Mrs. J. H. Barrett.....	San Luis Obispo.....	\$1 00
Crochet cape.....	Annie Wright.....	San Luis Obispo.....	
Three shawls and one cap.....	Mrs. T. W. Vetter- line.....	San Luis Obispo.....	
Knitted shawl.....	Mrs. T. W. Vetter- line.....	San Luis Obispo.....	
Pillow shams.....	Mrs. Dr. Nichols.....	San Luis Obispo.....	
Worsted afghan.....	Mrs. Dr. Nichols.....	San Luis Obispo.....	
Worsted afghan.....	Mrs. N. J. Abbott.....	San Luis Obispo.....	\$2 00
Crochet edging.....	Mrs. J. C. Stocking.....	Moro.....	Diploma.
Table scarf.....	Miss Lowenstein.....	San Luis Obispo.....	
Three banners.....	Miss Lowenstein.....	San Luis Obispo.....	
Birds' eggs and curios.....	Miss H. Mercier.....	San Luis Obispo.....	
Crochet tidy.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
Satin sofa pillow.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
Twine tidy.....	Mrs. A. C. Saner.....	San Luis Obispo.....	\$1 00
Crochet tidy.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
Two pair of knitted stockings.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
One pair of knitted mits.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
One embroidered flannel skirt.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
Crochet fascinator.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
One knitted table cover.....	Mrs. A. C. Saner.....	San Luis Obispo.....	
Fisher card tidy.....	Mrs. J. Pyke.....	San Luis Obispo.....	
One fascinator.....	Miss B. Volhner.....	San Luis Obispo.....	\$1 00

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Hat crown	Miss Eva Wurch..	San Luis Obispo.	.....
One clothes bag	Mrs. H. C. Hobson..	San Luis Obispo.	.....
One set tea tray covers	Mrs. H. C. Hobson..	San Luis Obispo.	Spe. men.
Plaque paper flowers	Miss Clara Dennis..	San Luis Obispo.	.....\$1 00
Bookbinding	Allen, Martin & Co.	San Luis Obispo.	.....\$2 50
Dressmaking	Miss Dora Rogers..	San Luis Obispo.	.....
Shells gathered from Pacheco Beach	Mrs. A. S. Hazard..	San Luis Obispo.	.....\$2 00
Bead work	Mrs. Kalisher	San Luis Obispo.	.....\$1 00
Shell frame and moss wreath	Mrs. A. S. Hazard..	San Luis Obispo.	.....\$1 00
Crochet quilt	Mrs. Mark Elberg..	San Luis Obispo.	.....\$2 50
Stool splasher	Mrs. J. S. Price....	San Luis Obispo.	.....
Sofa pillow	Willie Dow	San Luis Obispo.	.....
Plaque paper flowers	Miss Lulu Redman..	San Luis Obispo.	.....
Three pieces hammered brass	Mrs. C. R. Brumley..	San Luis Obispo.	.....
Piano stool cover	Miss Minnie King..	San Luis Obispo.	.....
Sofa cushion cover	Miss Minnie King..	San Luis Obispo.	.....
Chenille embroidered banner	Miss Minnie King..	San Luis Obispo.	.....
Best specimen writing, under eighteen years old	E. P. Schow	San Luis Obispo.	Diploma.
Paper flowers	Mrs. E. W. Steele..	San Luis Obispo.	.....
Lamp shade	Mrs. E. W. Steele..	San Luis Obispo.	.....
Baby boy, under one year	Mrs. L. Philbrick..	San Luis Obispo.	.....
Baby girl, under one year	Mrs. Mag'ie Hanna..	San Luis Obispo.	.....\$5 00
Baby boy, under one year	Mrs. Wm. Dunbar..	San Luis Obispo.	.....
Baby boy, under one year	Mrs. Fiedler	San Luis Obispo.	.....\$5 00
Best display wall paper and fancy goods	J. A. Goodrich....	San Luis Obispo.	Diploma.
Painting on plaques	Mrs. L. H. Simmons..	San Luis Obispo.	Spe. men.
Paper flowers	Miss Jansen	San Luis Obispo.	Diploma.
Specimen needlework	Mariana Lazcano..	San José, San L. Obispo Co.	Spe. men.
LAUNDRY AND TOILET SOAPS.			
Exhibit home-made soap	A. W. Russell	San Luis Obispo.	Diploma.
Minerals	L. P. Dallidet	San Luis Obispo.	.....
Exhibit minerals	O. Lichtenfeld & Co.	San Luis Obispo.	.....
Copy magna charta	L. M. Kaiser	San Luis Obispo.	.....
Exhibit stalactites	Geo. H. Andrews..	San Luis Obispo.	.....
Exhibit twenty-one pieces onyx	Miss M. C. Day....	San Luis Obispo.	.....
Exhibit inlaid wood ruler	Mrs. Judge Steele..	San Luis Obispo.	.....

SPEED PROGRAMME.

WEDNESDAY, OCTOBER 12, 1887.

RACE No. 1—RUNNING.

Purse, one hundred dollars. First, second, and third money. Half mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Garnet, by White John	Ed. Smith	San Luis Obispo.
Sir Edgerton	E. L. Bainbridge	San Luis Obispo.
Elsie Ban, three years; by King Ban; dam, Booty, by Asteroid	George Van Gordon	San Simeon.

<i>Position at Starting.</i>	<i>Position at Close.</i>			
1. Garnet	Elsie Ban	1	1	1
2. Sir Edgerton	Garnet	2	3	2
3. Elsie Ban	Sir Edgerton	3	2	3

Time—0:52 $\frac{1}{4}$; 0:55; 0:53 $\frac{1}{4}$.

RACE No. 2—TROTTING.

For yearlings. Purse, twenty dollars. First, second, and third money. Half mile heats; best two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Brutus	N. H. Fitzwater	San Luis Obispo.
Monroe S, sired by Monroe Chief; dam, by Gibraltar	Brown & Taylor	San Luis Obispo.
Dude	Geo. Van Gordon	San Simeon.

<i>Position at Starting.</i>	<i>Position at Close.</i>			
1. Monroe S	Monroe S	1	1	
2. Dude	Dude	2	2	
3. Brutus	Brutus	3	3	

Time—2:20; 2:12 $\frac{1}{2}$.

THURSDAY, OCTOBER 13, 1887.

RACE No. 1—TROTTING.

Stallion stake. Purse, one hundred dollars. Free for all in San Luis Obispo County, whose record is not better than 2:40. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
O'Donahue	C. Lee	San Luis Obispo.
Timboline, six years; sire, Newland's Hambletonian; dam, Corriander, by Iowa Chief	George Van Gordon	San Simeon.

RACE NO. 1—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Timboline	Timboline 1 1 2 1
2. O'Donahue	O'Donahue 2 2 1 2
<i>Time</i> —3:02; 3:04; 2:54.	

RACE NO. 2—TROTTING.

Purse, two hundred dollars. First, second, and third money. Free for all horses in Santa Barbara, Monterey, and San Luis Obispo Counties, whose record is not better than 2:40. • Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maud H	Jack Corcoran	San Luis Obispo.
Eagle, g. g., by Echo; dam, by Patchin.	George Van Gordon	San Simeon.
Nettie	P. W. Murphy	Santa Margarita.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Maud H	Eagle 1 1 1
2. Eagle	Maud H 2 3 2
3. Nettie	Nettie 3 2 3
<i>Time</i> —2:42 $\frac{1}{4}$; 2:44 $\frac{3}{4}$; 2:43.	

FRIDAY, OCTOBER 14, 1887.

RACE NO. 1—RUNNING.

Purse, one hundred and fifty dollars. First, second, and third money. Free to all horses in Santa Barbara, Monterey, and San Luis Obispo Counties. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sir Edgerton	E. L. Bainbridge	San Luis Obispo.
Consullo S, by Grindstone; dam, Nina, by Woodburn	E. R. Den	Santa Barbara.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Consullo	Consullo 1
2. Sir Edgerton	Sir Edgerton dis. first heat.
Consullo first and third money.	
<i>Time</i> —1:50.	

RACE NO. 2—RUNNING.

Purse, one hundred dollars. First, second, and third money. Free to all horses in San Luis Obispo County. Single dash of one mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Elsie Ban	George Van Gordon	San Simeon.
Kelpie	Ed. Smith	San Luis Obispo.
Dante	C. R. Callender	San Luis Obispo.

RACE No. 2—RUNNING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Dante	Elsie Ban
2. Elsie Ban	Dante
3. Kelpie	Kelpie
<i>Time—1:53½.</i>	

RACE No. 3—RUNNING.

Purse, fifty dollars. Half-mile dash for saddle horses.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred	Fries Brothers	Nipoma.
Fly, b. s.	J. B. Estudillo	San Luis Obispo.
Wonder, s. s.	John Scott	Cayucos.
Santiago	Mr. Santiago	San Luis Obispo.
Orphan Boy	Benj. Pierce	Moro.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Orphan Boy	Santiago
2. Fly	Wonder
3. Fred	Fly
4. Wonder	
5. Santiago	
<i>Time—0:56½.</i>	

RACE No. 4—TROTTING.

Purse, fifty dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maid of San Luis	P. W. Murphy	Santa Margarita.
De Yoe	Mr. Tolls	San Luis Obispo.
Valentine	Mr. Brumley	San Luis Obispo.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Maid of San Luis	Valentine
2. De Yoe	De Yoe
3. Valentine	Maid of San Luis
<i>Time—3:01½; 3:09; 3:01½; 3:02½.</i>	

SATURDAY, OCTOBER 15, 1887.

RACE No. 1—TROTTING.

Purse, two hundred dollars. Two-year olds. Free to all in the county. First, second, and third money. Best two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Frankie(2), by Altoona; dam, the Bump mare ..	George Van Gordon ..	San Simeon.
Stella C, by Director; dam, Speculation ..	E. W. Steele	San Luis Obispo.
Miss Monroe, by Monroe Chief; dam, A. W. Richmond	Brown & Taylor	San Luis Obispo.

RACE No. 1—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Stella C.	Frankie. 1 1
2. Frankie	Miss Monroe. 2 2
3. Miss Monroe	Stella C. 3 3
<i>Time</i> —3:08 $\frac{3}{4}$; 3:06 $\frac{1}{2}$.	

RACE No. 2—TROTTING.

Purse, one hundred and fifty dollars. Free to all in the county whose record is not better than three minutes. First, second, and third money. Best three in five.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Tom Woods' Colt	Mr. Tracy.	Moro.
Lady Emma	R. W. Toll	San Luis Obispo.
Timboline	George Van Gordon	San Simeon.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Tom Woods' Colt	Timboline
2. Lady Emma	Lady Emma
3. Timboline	Tom Woods' Colt
<i>Time</i> —2:58 $\frac{1}{2}$; 2:53 $\frac{1}{4}$; 2:50 $\frac{1}{2}$.	

RACE No. 3—TROTTING.

No purse. Exhibition trotting race. Best two in three. One mile.

<i>Name and Pedigree of Horse.</i>	<i>By Whom Entered.</i>	<i>P. O. Address.</i>
Nettie	P. W. Murphy	Santa Margarita.
Crown Point	George Van Gordon	San Simeon.
Maud H.	Mr. Harris.	San Luis Obispo.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Nettie	Maud H. 3 1 1
2. Crown Point	Nettie. 1 2 2
3. Maud H.	Crown Point
<i>Time</i> —2:44 $\frac{3}{4}$; 2:41 $\frac{1}{4}$; 2:58.	

TRANSACTIONS

OF THE

SEVENTEENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Nevada and Placer.

OFFICERS OF THE ASSOCIATION.

SAMUEL GRANGER.....	President.
GEORGE FLETCHER.....	Secretary.
E. M. PRESTON.....	Treasurer.

DIRECTORS.

C. R. CLARKE.....	Nevada City, Nevada County.
A. B. DRIESBACH.....	Indian Springs, Nevada County.
S. GRANGER.....	Grass Valley, Nevada County.
WILLIAM MENNER.....	North San Juan, Nevada County.
W. B. HAYFORD.....	Colfax, Placer County.
GEORGE L. THRELKEL.....	Newcastle, Placer County.
W. D. PERKINS.....	Rocklin, Placer County.
E. W. MASLIN.....	Loomis, Placer County.

REPORT.

GRASS VALLEY, December 31, 1887.

To the honorable the State Board of Agriculture :

GENTLEMEN: The Directors of the Seventeenth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

GEORGE FLETCHER, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

From contributions—Nevada City	\$290 00	
North San Juan	120 00	
Grass Valley	803 00	
Premiums donated	27 00	
Fruit sold	1 00	
		\$1,241 00
Life membership tickets		20 00
From exhibitors and hack badges		182 00
At Park—3,841 single admission tickets	\$1,920 50	
216 half admission tickets	54 00	
Grand stand, 609 tickets at 25 cents	152 25	
		2,126 75
At Pavilion—3,528 tickets at 25 cents each	\$881 85	
Sale of lumber	8 00	
		889 85
Privileges sold—Bar	\$860 00	
Restaurant	165 00	
Fruit and candy stand	80 00	
Refreshment stand at pavilion	20 00	
Percentage on pools sold	863 50	
		1,988 50
Entrees and forfeits to races		1,913 00
State appropriation		2,000 00
Bills payable		530 67
Overdraft		70 79
		\$10,962 56

Expenditures.

Maintenance of track and fences	\$541 05	
Repair of buildings	276 55	
Repair of tools	48 25	
		\$865 85
Park expenses—Gatekeeper and ticket sellers	\$288 00	
Watchmen and police	200 50	
Judges and entry clerks	197 50	
Feed and bedding for stock	472 45	
Music	225 00	
Ribbons	9 05	
		1,393 40
Premiums on stock exhibits		429 50
Purses for races		4,685 00

Pavilion expenses—Doorkeepers and ticket sellers	\$45 00	
Watchmen and police	57 50	
Entry clerks	44 00	
Preparing hall for exhibits	140 02	
Rent of hall	100 00	
Music	7 50	
Gas	9 00	
Muslin and ribbons	16 60	
Superintendents	50 00	
		\$469 72
Premiums on exhibits at pavilion		555 00
General expenses—Stationery, advertising, and printing	\$802 83	
Directors' hotel and traveling expenses	208 00	
Insurance	220 65	
Lettering diplomas	25 00	
Dues to the National Trotting Association	56 25	
Ice	24 67	
Legal services and expenses	36 40	
Electric light	25 00	
Cart	20 00	
Feed for stock of association, shoeing, etc.	105 06	
Office expenses, stamps, etc.	46 28	
Interest on mortgage and floating debt	674 55	
		2,244 69
Overdraft December 31, 1886		319 50
		\$10,962 56

Indebtedness, December 31, 1887.

Mortgage on race track and buildings	\$6,000 00
Directors note to Citizens' Bank	500 00
Other bills payable	530 67
Overdraft	70 79
	\$7,101 46

ANNUAL ADDRESS.

By E. M. PRESTON.

MR. PRESIDENT, AND LADIES AND GENTLEMEN OF THE SEVENTEENTH DISTRICT AGRICULTURAL ASSOCIATION: In appearing before you this evening to deliver the annual address for this association on such short notice, permit me to state that I share with you in the disappointment that one and all must feel in not being permitted to listen to the remarks of the honorable gentleman who was originally selected by the Directors to address you on this occasion. In common with many others who are present this evening, I had anticipated much pleasure in having the opportunity to listen to a carefully prepared discourse from Hon. E. W. Maslin. He is a man eminently qualified for this difficult and embarrassing responsibility. He is a lawyer by profession, gifted in speech, and of ready wit. He is a practical fruit grower, a man of keen observation, and of practical methods. He is experienced in the management of agricultural fairs, and in all respects qualified to deliver to you such an address as I cannot hope to equal, and certainly shall not attempt to imitate.

Even so recently as last Tuesday I had not received the remotest intimation that I would be called upon to address you, and, for this reason, shall not attempt to deliver to you a set speech, but will rather crave the privilege of calling your attention to the variety, quality, and extent of the exhibits which we see spread out in the pavilion before us to-night, and then will endeavor to draw some practical and useful lesson from the result of our observations.

But first permit me to ask, what is the object of this exhibition? Is it only to ascertain who can grow the largest cabbages and beets, or the best and largest fruits? Is it simply to learn who has the fastest horse, or the most profitable cow, or the fattest bullock, or yet to criticise the needlework, embroidery, painting, or other works of art by our neighbors? Is it to ascertain whether Grass Valley can display a finer pavilion than Nevada City, or whether Placer County fruits and vegetables are of larger size and finer quality than those of Nevada County? No; most emphatically, no.

While it is undoubtedly true that the comparison of the products of our soil and the competition for premiums are necessary incidents to these exhibitions at our annual fairs, yet they are not the real fundamental purpose for which these fairs are held. Their real beneficial purpose is, I apprehend, by encouraging competition, to promote progress, and to stimulate industry. It is to establish here an experimental school where all can assemble for the purpose of comparing the results of the year's labor and experiment, and thus improve our own methods by profiting by the experience of our neighbors. It is to ascertain, for example, which are the best breeds of horses for speed, and which are best for farm work, and for other purposes; which are the best breeds of cattle for general dairy purposes; which for family use, and which best for beef; which breeds of sheep are the best adapted to wool growing in these altitudes, and which best for

mutton: which soils and localities are best adapted to fruit growing, and which to pasturage and grain growing: which varieties of fruits are best adapted to the respective localities in which we reside: which varieties are most profitable for market, and which are best for our immediate domestic use. In short, it is to learn all available facts conducive to the improvement in the quality and wealth of our agricultural and horticultural products, and of our other economical industries. These facts are certainly worthy of our serious consideration, and while we engage in a generous rivalry in the exhibition of our products, let us at the same time make a critical examination of some of the articles here on exhibition, and consider, if you please, the lessons which result from these observations.

FORAGE PLANTS.

As an example of what the soils of this agricultural district will produce in the line of forage plants, I invite your attention for a moment to the remarkable display of grains and grasses. There are samples of alfalfa and rye grass gathered from fields which yielded from four to five tons of hay to the acre at a single cutting. There are samples of red-top grass which are five feet in height, oats six feet high, timothy five feet high. There are also bundles of red clover, buckwheat, orchard grass, buck-rye, mesquit grass, Hungarian millet, golden millet, Egyptian corn, and Kafir corn, all showing a rank and healthy growth and a luxuriant fruitage of seed. In suitable localities, with irrigation, these plants are made to yield from three to five tons of hay to the acre, producing from three to four crops each season. There are also fine samples of rye, oats, wheat, and sweet corn, all grown without irrigation, on the red hill lands between Grass Valley and Nevada City.

There is in that generous display of forage plants, a visible evidence of the future possibilities of this agricultural district, far more eloquent and convincing than any discourse of words possibly can be. There is the practical demonstration of the fact that those plants can be successfully and profitably grown all along these foothills, thus not only securing abundance of feed for dairy cows and other live stock, but also affording a profitable industry, as a good quality of hay always commands in this market from \$15 to \$20 per ton.

FRUITS.

But, while a great variety of forage plants find a congenial home among these foothills, we are able to demonstrate that fruits grow with equal luxuriance, and that they promise a more profitable yield per acre at far less cost for cultivation and marketing. Experience has demonstrated beyond dispute, that the varieties of fruit adapted to the altitude and climate of this agricultural district attain equal size, acquire a superior flavor, and are possessed of far better keeping and shipping qualities than fruits of like varieties grown at lower altitudes. For these reasons our foothill fruits have justly attained a national reputation, and with the improved methods of cold-storage and speedy shipment, are destined to give us the world for a market. As an evidence of the inviting quality of our fruits, we have but to turn our attention to this fine display from Placer County, with its luscious grapes, its fragrant peaches, its prunes, figs, apples, pears, and pomegranates: fruits all fit for the table of a king. In one of the orchards from which this fruit was gathered, are trees which produced an abundance of peaches weighing twenty ounces each. From a single tree was shipped two full boxes of selected peaches in which there was not a single

peach which measured less than twelve inches in circumference. The wine and raisin grapes here on exhibition are equal in size and quality, while the quantity of fruit per acre is equal to that in the other most favored portions of this State.

A critical examination of the Bartlett pears here on exhibition leads resistlessly to the conclusion that those grown at the higher altitudes, say at Michigan Bluff and Dutch Flat, are larger, firmer in quality, and fairer in appearance than those grown in the low altitudes bordering on the plains. We also find a like difference in the apples. While the samples on exhibition are all of a high grade of excellence, yet it is apparent even to the casual observer, that those grown at altitudes varying from two thousand seven hundred to three thousand two hundred feet, say at Little York, Liberty Hill, and other localities, are finer in appearance, firmer in texture, and are possessed of better keeping and shipping qualities than those grown in the lower valley regions.

On the next table beyond is a box filled with plums, which grew at an altitude of more than three thousand feet above the sea. Among the lot are many specimens which weigh one fourth of a pound each, while in the whole lot are as fair and luscious as any plums of the same variety from any part of the world. On the same table are samples of prunes of both the German and the French varieties, which in size, flavor, and appearance are equal to any grown in Europe.

As an example of what can be exhibited from a single orchard of limited extent, we see on a table in the center of the hall thirty varieties of apples, eight varieties of pears, and twelve boxes of dried fruits of as many varieties, all gathered from a single orchard. The fruits were dried on the place, in the open air, in the good old fashioned way, without the aid of factory or machinery. Examine them, and decide for yourselves whether it pays to save and to dry your own fruits for your family supplies. In those boxes are many luscious feasts in store for that family, long after the fresh fruits have disappeared from the market.

Further along are plates of ripe, fresh blackberries and strawberries, from vines that are in continual bearing from the first crop till late in the fall, often as late as the middle of December.

There are orchards all along those foothill altitudes as high as two thousand seven hundred feet above the sea, where one can find to-day blackberry and strawberry vines in bloom, and with fruit in every stage of growth, from the insipid, green berry to the fully matured fruit.

On the same tables with these fruits of a northern clime we find the fig, olives, persimmons, oranges and lemons, pomegranates, and other fruits of the semi-tropical regions, all grown successfully and profitably in this district; all requiring a mild temperature, not subject to great or sudden extremes of heat and cold, affording the most convincing evidence of the mildness and salubrity of our climate. The result of the exhibition of such good qualities of these fruits is sure to be beneficial both in encouraging immigration and in encouraging others to engage more extensively in that line of industry.

OTHER PRODUCTS.

But this is not all. We have here numerous examples of vegetable growth which are truly surprising in their size and proportion. Look, for illustration, at those mammoth pumpkins and squashes; those toothsome cantaloupes; those huge watermelons, the latter being gathered from a field in which many of the melons weighed from fifty to seventy pounds each. There are stock beets, nearly as large as a barrel; tomatoes, that weigh

from four to five pounds each; stalks of Indian corn, fourteen feet in height; sunflowers, that have grown to the height of sixteen feet; a stalk of hemp, eighteen feet long, and hop vines fifty feet in length. There is yet another feature of this exhibition which is even more significant than these enormous growths of vegetables. I refer to the great variety and uniform excellence of the potatoes, all of which are large and smooth, free from blemishes, prolific, and when cooked, mealy and of unsurpassed flavor. Mountain grown potatoes are universally acknowledged to be of better quality than like varieties grown in the valleys. As an evidence of this fact I have but to remind you that mountain potatoes always find a ready market at an advance of from one quarter to one half cent per pound higher price than other potatoes in the market. Mountain grown potatoes, like the foothill fruits, are always in demand, and there is no danger of overstocking the market.

IRRIGATION.

While it is an undeniable fact that many if not all of these vegetable products thrive better and produce more abundantly under a careful system of artificial irrigation, yet it is, nevertheless, equally true, that a large majority of our farm and orchard products can be profitably and successfully grown without irrigation, providing, of course, that the ground has been properly prepared, and is thoroughly cultivated at the proper season. As an example of what has been accomplished without irrigation, we have but to examine the beets, ruta bagas, carrots, parsnips, corn, cabbage, potatoes, tomatoes, squash, pumpkins, and citron, on the section of the table near the window at my left, all of which samples, I am assured, were grown on the red sidehill lands without a single drop of irrigation except that which fell from the clouds. Further along are specimens of rye, oats, wheat, Russian oats, and sweet corn, all of which were gathered from fields which had not been irrigated from the time the grain was planted until the crop was harvested. In many places throughout this district, are orchards and vineyards in profitable bearing, which are situated entirely above the water supply and, of necessity, without irrigation. From the evidence before us in this pavilion, we are warranted in branding as false the often repeated assertion, that the foothill lands are useless for horticultural purposes unless supplied with irrigation.

OTHER EXHIBITS.

The limited time at my command will not permit me to indulge in an extended notice of the many other meritorious articles on exhibition. Of the needlework, paintings, etchings, photographs, and other works of art and ornament; nor even to review the merits of the fine horses, thoroughbred cattle, and other stock at the fair grounds; and yet I crave your attention long enough to consider some of the practical lessons which we are to learn from this successful display of the resources and products of the Seventeenth District Agricultural Association.

Seventeen years ago the ride on the cars from Roseville Junction to Colfax carried the observer over a series of wild, unimproved hills, scantily clothed with forest, abounding in chaparral and other undesirable qualities that rendered the land, in the opinion of the average traveler, dear at the government price of \$2 50 per acre. The few inhabitants scattered along the line of the road, cultivated their gardens and a few fruit trees for family supplies, and by practical experiment learned that they could even grow vegetables on the rough hillsides and in the intervening valley. Some

enterprising genius reasoned from this result that fruits and vegetables could be grown in the same localities equally well for the market; and what is the result? Orchards and vineyards abound from Colfax westward to the Sacramento County line. Thrifty cottages grace the hillsides, and those same wild lands, now brought under cultivation, readily command a price of from \$20 to \$100 per acre. The fruits of Placer County have already attained a well merited fame abroad, and her horticultural enterprises are every year assuming larger proportions.

But how is it with the other portion of the district, that is, with Nevada County? The climate of Nevada County is equally salubrious; her soil is equally fertile; water is equally abundant for irrigation; there are more acres of tillable land within her borders. Her fruits and vegetables are equal in quality to those of her sister county, and yet there are large areas of the fertile lands of Nevada County that are still covered with the primitive forest; while lands which command \$50 per acre in Placer, can be bought of equal quality in Nevada at from \$10 to \$20 per acre. The great stumbling block in the way of the more rapid progress in Nevada County, seems to be the lack of faith in the capabilities of her soil and climate, and a lack of well directed industry and enterprise to convert these undeveloped resources with profitable and progressive industries.

A SMALL FARM WELL TILLED.

This question is often asked: Is it possible for a poor man to make a living and support a family on from twenty to forty acres of land in Nevada County, or is it possible to support a family while clearing the land, planting an orchard, and waiting for it to come into bearing?

As a partial answer to these queries, so far as relates to the possibilities of our soil and climate, I have but to refer you to this magnificent display of the productions of this region; to the grains, the grasses, the vegetables, the fruits, and the dairy products on exhibition before us. Such a display ought to be evidence sufficient to convince the most skeptical, but in addition to this I will give you a practical illustration of what has been done in this line.

Within less than five miles of Grass Valley is a small farm of forty acres, owned and tilled solely by a poor widow. This little farm is located on the loose red lands, on a sidehill, surrounded by pine forests. Its owner had sufficient faith in the soil and climate of the county to believe that she could make a living off from a small tract of land; and what is the result? She has an orchard, a garden, a field of potatoes, a fine meadow of alfalfa, fat cows, lively pigs, healthy poultry, and a horse and market wagon to market her crops. She milks her own cows, makes butter, and sells the butter at the highest market rate. She sells eggs, poultry, fruit, and potatoes. In a single year she cultivated, dug, marketed, and sold a crop of potatoes that netted her \$300 in gold coin. Her land is paid for, she is out of debt, and has an abundance on which to subsist.

With such an example of enterprise and success as the result of the unaided efforts of a poor, feeble woman, and with the like success which has resulted from the thorough cultivation of small farms in other localities in this district, we are fully justified in the assertion that a small farm judiciously planted, and thoroughly tilled, is ample for the support of any moderately sized, economical family, with a reasonable prospect of being able to lay by a small reserve for a stormy day.

Evidences of the fertility of the soil and of the salubrity of the climate, certainly are not wanting. We have those evidences before us to-night, in

the flowers, fruits, and vegetables which grace this pavilion, and which have been gathered from nearly every section of the tillable portion of the county. Travel over the county and these evidences confront you at nearly every turn, in the thrifty orchards, rank vegetables, and luxuriant grains and grasses, that abound wherever thrift, industry, and irrigation have called them into existence. Even in old deserted orchards, the fruit trees continue to bear in spite of neglect. A remarkable illustration of this tendency can be seen to-day at Rough and Ready, once a lively mining camp, now a sleepy, half deserted hamlet. There the peach trees may be seen growing along the highway, in the fence corners, and even among the rock piles, unpruned and uncultivated, yet loaded down with fine luscious fruit, inviting alike to the sight and the taste. The same is true, to a less extent, however, of the fig tree, while the apple, plum, pear, and quince grow to absolute perfection. Time will not permit that I should enlarge upon the lessons which we are to learn from the extensive peach orchards in the western part of the county; of the raisin vineyards at Indian Springs, and elsewhere; of the excellent quality of the wine grapes grown on the steep hillsides, and in the seemingly sterile soil of the more rocky portions of the county; of the orange and olive trees that testify to the mildness of the winters; of the nurseries and orchards on the granite hills, or a profitable garden and orchard on the still more barren, decaying bedrock of an old exhausted mining claim, from which the surface soil has been washed into the rivers. The evidences are sufficient to convince the most skeptical that these pine-clad hills are all capable of being converted into orchards, and that lands that are now selling at from \$5 to \$10 per acre, will, with orchards and vineyards planted on them, readily command prices varying from \$100 to \$150 per acre.

The question is often asked, "What shall we do with our boys and girls?" In Auburn and the vicinity are over one thousand boys and girls, and in the towns of Grass Valley and Nevada City are over twenty-five hundred children, all growing up without an occupation, and many of them with no other aim or purpose in life than mere subsistence. What shall we do for the rising generation? Permit me to suggest a solution of this question.

Let every head of a family go and secure from twenty to forty acres of these foothill fruit lands. Cut down the trees and sell the wood, grub out the brush, clear the land, plow the soil, plant a young orchard, prune and protect the trees; plant between the rows cabbages, beets, beans, berries, or any other crop that will yield a profitable return while you are waiting for the trees to mature. Raise fowls, swine, and cattle. Teach and require your children to cultivate the soil, to plant, to prune, to pick the crops, to dry and preserve fruits, to milk, churn, and make cheese, and to market the products of their labor; give them industrious habits and a profitable industry in place of the street vices which are now so prevalent; and thus shall these pine-clad hills become converted into gardens and orchards, and these vales become meadows teeming with dairies. Pleasant homes will spring up everywhere, surrounded by profitable acres, the world will become a market for our fruits, our meager population of twenty thousand souls will swell to the grand proportions of one hundred thousand; the lands will become the true and reliable source of wealth, and these foothills become the habitation of a thrifty, industrious, and prosperous people.

Above all, let us acquire the habit of speaking well of the county in which we reside; of its climate; of its soil; of its prospects; and of its people. Condemn all croakers in unmeasured terms of disapprobation. Class with the public enemies all those who seek to delay public prosperity, by belittling and belying the resources and capabilities of our soil and climate.

Use every honorable means to acquire a good opinion of the future possibilities of our foothill regions, and use every reasonable effort to impress others with the same favorable opinions.

Let us each secure a little plot of ground and put our hands to the plow; let us wield the spade, the hoe, and the pruning hook, and thus stimulate industrious habits in our children, and induce others, by our example, to go and do likewise.

Increased acreage of orchards and cultivated lands means increased production and increased values. Increased values will certainly bring us a lower rate of taxation and better credit. The demand for our fruits is already created; it remains for us to furnish the supply, and this supply in turn will create a necessity for new industries; for increased facilities; for transportation; and for an organization and unity of action in the marketing and preserving of the crops. In order to avail ourselves of the best facilities for marketing, a fruit growers' union should be organized. In order to preserve the fruits that are not adapted to transportation, fruit driers and fruit canneries should be established. By thus emulating each other in these industrious enterprises, and uniting in these organizations for the better preservation and marketing of our crops, we shall need no fictitious boom to secure returning prosperity, for prosperity must necessarily result from well directed industry and unity of action and effort.

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS II—STANDARD TROTTERS—STALLIONS.		
<i>Three Years Old and Over.</i>		
Richard Scott.....	George Dickinson.....	Roseville.
CLASS III—STALLIONS, GELDINGS, AND MARES OF ALL WORK.		
<i>Three Years Old and Over.</i>		
Hector.....	M. P. Peasley.....	Grass Valley.
St. John.....	E. Rabb.....	R'h and Ready.
Puss.....	R. J. Houston.....	Nevada City.
Kitt.....	R. J. Houston.....	Nevada City.
Dolly.....	E. Rabb.....	R'h and Ready.
CLASS IV—ROADSTERS—STALLIONS.		
<i>Three Years Old and Over.</i>		
General Hamilton.....	A. D. West.....	Grass Valley.
GELDINGS.		
<i>Three Years Old and Over.</i>		
Duke.....	W. Hashagen.....	Auburn.
<i>Two Years Old.</i>		
Lifton.....	John Bree.....	Grass Valley.
<i>One Year Old.</i>		
Duroc.....	M. C. Hogan.....	North San Juan.
Thomas F.....	J. Frazer.....	Nevada City.
Prince.....	B. Bernhart.....	Auburn.
Mack.....	M. K. Bennallack.....	Grass Valley.
Brunswick.....	J. R. Nickerson.....	Grass Valley.
MARES.		
<i>Three Years Old and Over.</i>		
Belle.....	M. C. Hogan.....	North San Juan.
Maggie O.....	C. R. Clarke.....	Nevada City.
Lizzie Mac.....	M. P. Peasley.....	Grass Valley.
Dinah.....	George Dickinson.....	Roseville.
Dolly.....	J. R. Nickerson.....	Grass Valley.
<i>Two Years Old.</i>		
Beatrice.....	E. C. Morgan.....	Grass Valley.
<i>One Year Old.</i>		
Cora.....	C. E. Taber.....	North San Juan.
<i>Under One Year.</i>		
Flora.....	August Combe.....	Grass Valley.
CLASS V—STALLIONS, GELDINGS, AND MARES.		
<i>Four Years Old and Over.</i>		
Mollie.....	Patrick Hall.....	Grass Valley.
Jane.....	Richard Noell.....	Grass Valley.
Gypsy.....	C. E. Taber.....	North San Juan.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
Grace	John Bree	Grass Valley.
Napoleon	W. Hashagen	Auburn.
<i>Three Years Old.</i>		
Ned	Patrick Hall	Grass Valley.
Sally	John Bree	Grass Valley.
<i>Two Years Old.</i>		
Bell	R. Noell	Grass Valley.
CLASS VI—CARRIAGE HORSES—SPAN.		
Doc and Dan	A. B. McRae	Roseville.
SADDLE HORSES.		
Flora B.	B. A. Penhall	Grass Valley.
SWEEPSTAKES.		
<i>Stallion, of any Age or Breed.</i>		
Mike Wilks	M. C. Hogan	North San Juan.
<i>Mare, any Age or Breed.</i>		
Bell	M. C. Hogan	North San Juan.
<i>Gelding, of any Age or Breed.</i>		
Duroc	M. C. Hogan	North San Juan.
CLASS VII—JACKS.		
Black Hawk	F. N. Wheeler	Grass Valley.
CLASS I—JERSEYS AND ALDERNEYS—BULLS.		
<i>Three Years Old and Over.</i>		
Jersey Duke	R. Noell	Grass Valley.
Judge Ward	F. N. Wheeler	Grass Valley.
<i>Two Years Old.</i>		
Major	R. Noell	Grass Valley.
Glenbrook	A. D. Sutton	Nevada City.
<i>One Year Old.</i>		
Bell	Al. Millhone	Nevada City.
Jersey Prince	A. D. Sutton	Nevada City.
St. Lambert Lad	F. N. Wheeler	Grass Valley.
COWS.		
<i>Three Years Old and Over.</i>		
Katie	R. Noell	Grass Valley.
Lucy	R. Noell	Grass Valley.
Kentucky Bee	F. N. Wheeler	Grass Valley.
Laura S	F. N. Wheeler	Grass Valley.
Mollie 2d	F. N. Wheeler	Grass Valley.
<i>Two Years Old.</i>		
Jersey Bell of Grass Valley	R. Noell	Grass Valley.
Jersey Bell of Nevada City	R. Noell	Grass Valley.
<i>One Year Old.</i>		
Alma Golddrop	F. N. Wheeler	Grass Valley.
Pogis Lady	F. N. Wheeler	Grass Valley.
CLASS II—DURHAMS—BULLS.		
<i>One Year Old.</i>		
St. Peter	Patrick Hall	Grass Valley.
<i>Calves.</i>		
Gov. Garber	F. N. Wheeler	Grass Valley.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
COWS.		
<i>Three Years Old and Over.</i>		
Forest Rose 2d	H. B. Nichols	Grass Valley.
<i>Two Years Old.</i>		
Edith 4th	Patrick Hall	Grass Valley.
<i>Calves.</i>		
Moss Rose	Patrick Hall	Grass Valley.
Aggie	Patrick Hall	Grass Valley.
CLASS III—AYRSHIRE BULLS.		
<i>Three Years Old and Over.</i>		
Menlo	H. B. Nichols	Grass Valley.
<i>Calves.</i>		
Pride of Grass Valley	H. B. Nichols	Grass Valley.
COWS.		
<i>Three Years Old and Over.</i>		
Lady Scarboro	H. B. Nichols	Grass Valley.
Eudora	H. B. Nichols	Grass Valley.
<i>Two Years Old.</i>		
Bonnie Belle	H. B. Nichols	Grass Valley.
<i>One Year Old.</i>		
Laurie	H. B. Nichols	Grass Valley.
<i>Calves.</i>		
Nellie Bly	H. B. Nichols	Grass Valley.
Nellie Boyd	H. B. Nichols	Grass Valley.
Bonnie Maid	H. B. Nichols	Grass Valley.
CLASS IV—HOLSTEINS—BULLS.		
<i>Three Years Old and Over.</i>		
Tehama	H. B. Nichols	Grass Valley.
<i>One Year Old.</i>		
Tickler	W. C. Jones	Grass Valley.
Jack Casement	F. N. Wheeler	Grass Valley.
Alfred	F. N. Wheeler	Grass Valley.
George	F. N. Wheeler	Grass Valley.
Edward	F. N. Wheeler	Grass Valley.
Othe	F. N. Wheeler	Grass Valley.
<i>Calves.</i>		
Barbara Prince	H. B. Nichols	Grass Valley.
Pride of California	H. B. Nichols	Grass Valley.
Porter Ashe	F. N. Wheeler	Grass Valley.
COWS.		
<i>Three Years Old and Over.</i>		
Juanita Maid	H. B. Nichols	Grass Valley.
Juliet	F. N. Wheeler	Grass Valley.
Juno	F. N. Wheeler	Grass Valley.
<i>Two Years Old.</i>		
Barbara Maid	H. B. Nichols	Grass Valley.
Los Flores	H. B. Nichols	Grass Valley.
Lady Jane	F. N. Wheeler	Grass Valley.
Mitzie 3d	F. N. Wheeler	Grass Valley.
Josie	F. N. Wheeler	Grass Valley.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
<i>One Year Old.</i>		
Infelice	H. B. Nichols	Grass Valley.
Flirtation	W. C. Jones	Grass Valley.
Arlington Bell	W. C. Jones	Grass Valley.
Jacoba 3d	F. N. Wheeler	Grass Valley.
Colorado Girl 2d	F. N. Wheeler	Grass Valley.
Clara	F. N. Wheeler	Grass Valley.
Flossie 2d	F. N. Wheeler	Grass Valley.
Bell	F. N. Wheeler	Grass Valley.
Eliza	F. N. Wheeler	Grass Valley.
Mabel	F. N. Wheeler	Grass Valley.
Raafje 2d	F. N. Wheeler	Grass Valley.
Loutje	F. N. Wheeler	Grass Valley.
Bell	F. N. Wheeler	Grass Valley.
Bessie	F. N. Wheeler	Grass Valley.
Nellie	F. N. Wheeler	Grass Valley.
Daisy	F. N. Wheeler	Grass Valley.
Maud	F. N. Wheeler	Grass Valley.
SWEEPSTAKES—THOROUGHBRED.		
<i>One Bull and Four Females.</i>		
Menlo and four cows (Ayrshire)	H. B. Nichols	Grass Valley.
Tehama and four cows (Holstein)	H. B. Nichols	Grass Valley.
Jersey Duke and four cows (Jersey)	R. Noell	Grass Valley.
GRADED CATTLE.		
<i>Three Years Old and Over.</i>		
Topsy (sixty-three sixty-fourths Jersey)	H. B. Nichols	Grass Valley.
Daisy D (three fourths Jersey)	C. H. Barker	Grass Valley.
<i>Two Years Old.</i>		
Bessie 2d (three fourths Jersey)	H. B. Nichols	Grass Valley.
Nevada (one half Holstein)	H. B. Nichols	Grass Valley.
Lady Oaks (seven eighths Holstein)	F. N. Wheeler	Grass Valley.
<i>One Year Old.</i>		
Cypress (one half Ayrshire)	H. B. Nichols	Grass Valley.
Black Bess (one half Holstein)	H. B. Nichols	Grass Valley.
Verda (one half Holstein)	H. B. Nichols	Grass Valley.
Wanda (one half Holstein)	H. B. Nichols	Grass Valley.
Sally (three fourths Jersey)	R. Noell	Grass Valley.
<i>Calves.</i>		
Happy New Year (one half Holstein)	H. B. Nichols	Grass Valley.
Bell (seven eighths Jersey)	C. H. Barker	Grass Valley.
Daisy (seven eighths Jersey)	R. Noell	Grass Valley.
Punch (seven eighths Jersey)	F. N. Wheeler	Grass Valley.
Mary (fifteen sixteenths Holstein)	F. N. Wheeler	Grass Valley.
Kate (fifteen sixteenths Holstein)	F. N. Wheeler	Grass Valley.
CLASS I—THOROUGHBRED SHEEP—SPANISH MERINO.		
Ram, two years old and over, Dick	M. P. Peasley	Grass Valley.
Five ewe lambs	M. P. Peasley	Grass Valley.
HOGS.		
<i>Boar of Any Age.</i>		
Berkshire	R. Noel	Grass Valley.
Poland-China	G. D. Seville	Grass Valley.
<i>Breeding Sow of any Age.</i>		
Berkshire	R. Noel	Grass Valley.
Poland-China	H. Haunsen	Grass Valley.

FIRST DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
POULTRY.		
Trio, two hens and cock, Plymouth Rocks	J. H. Gassoway	Grass Valley.
Two hens and cock, Guinea fowls	J. H. Gassoway	Grass Valley.
Two turkeys, graded Holland	J. H. Gassoway	Grass Valley.
Trio, two hens and cock, Langshans	C. H. Barker	Grass Valley.
Pen of Langshans	James H. Findley	Nevada City.
Trio, two hens and cock, Brown Leghorns	Frank Spencer	Grass Valley.
Trio, two hens and cock, Game Bantams	Frank Spencer	Grass Valley.
Six Rouen ducks	M. P. Peasley	Grass Valley.
Trio, two hens and cock, Light Brahams	M. P. Peasley	Grass Valley.
Trio, two hens and cock, Dark Brahams	M. P. Peasley	Grass Valley.
Four, three hens and cock, Brown Leghorns	M. P. Peasley	Grass Valley.
Trio, two hens and cock, Bounty chickens	Mrs. Annie Rabb	Grass Valley.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS II—STANDARD TROTTERS.			
Dapp Grey	G. Dickinson	Roseville	\$10 00
STALLIONS, MARES, AND GELDINGS OF ALL WORK.			
Kitt	R. J. Huston	Nevada City	\$7 50
Dolly	E. Rabb	R'h and Ready	\$5 00
St. John	E. Rabb	R'h and Ready	\$5 00
STALLIONS.			
<i>Three Years Old and Over.</i>			
General Hamilton	A. D. West	Grass Valley	\$10 00
Duke	W. Hashagen	Auburn	\$7 50
<i>One Year Old.</i>			
Thomas J	J. Frazer	Nevada City	\$3 00
Mike Wilks (colt)	M. C. Hogan	North San Juan	\$2 50
Duroc	M. C. Hogan	North San Juan	\$2 50
Prince	B. Bernhart	Grass Valley	\$2 50
MARES.			
<i>Three Years Old and Over.</i>			
Lizzie Mac	M. P. Peasley	Grass Valley	\$10 00
Belle	M. C. Hogan	North San Juan	\$7 50
<i>Two Years Old.</i>			
Beatrice	E. C. Morgan	Grass Valley	\$7 50
<i>One Year Old.</i>			
Emma C	Dr. W. C. Jones	Grass Valley	\$3 00
Flora	August Combe	Grass Valley	\$2 50
Cora	C. E. Tabor	North San Juan	\$2 50
DRAFT HORSES.			
Napoleon	W. Hashagen	Auburn	\$10 00
Jane	R. Noell	Grass Valley	\$10 00
Mollie	P. Hall	Grass Valley	\$7 50
<i>Three Years Old.</i>			
Ned	P. Hall	Grass Valley	Diploma.
Gray Sally	John Bree	Grass Valley	Diploma.
<i>Two Years Old.</i>			
Belle	R. Noell	Grass Valley	\$5 00
CARRIAGE HORSES.			
Doc and Dan	A. B. McRae	Roseville	\$10 00
Saddle horse	B. A. Penhall	Grass Valley	\$5 00
JACKS.			
Black Hawk	F. N. Wheeler	Grass Valley	\$5 00
THOROUGHBRED CATTLE—JERSEYS AND ALDERNEYS—BULLS.			
Jersey Duke	R. Noell	Grass Valley	\$10 00
Judge Ward	F. N. Wheeler	Grass Valley	\$7 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
<i>Two Years Old.</i>			
Glendonbrook	A. D. Sutton	Nevada City	\$7 50
Major	R. Noell	Grass Valley	\$5 00
<i>One Year Old.</i>			
St. Lambert Lad	F. N. Wheeler	Grass Valley	\$3 00
COWS.			
<i>Three Years Old.</i>			
Kate	R. Noell	Grass Valley	\$7 50
Lucy	R. Noell	Grass Valley	\$5 00
<i>Two Years Old.</i>			
Belle of Grass Valley	R. Noell	Grass Valley	\$6 00
Belle of Nevada City	R. Noell	Grass Valley	\$4 00
<i>One Year Old.</i>			
Alma Golddrop	F. N. Wheeler	Grass Valley	\$3 00
Progis Lady	F. N. Wheeler	Grass Valley	Diploma.
DURHAMS—BULLS.			
St. Peter	P. Hall	Grass Valley	\$3 00
<i>Calves.</i>			
Governor Garber	F. N. Wheeler	Grass Valley	Diploma.
COWS.			
Forest Rose	H. B. Nichols	Grass Valley	\$7 50
<i>Two Years Old.</i>			
Edith	P. Hall	Grass Valley	\$7 50
<i>Calves.</i>			
Moss Rose	P. Hall	Grass Valley	Diploma.
CLASS III—AYRSHIRES—BULLS.			
Menlo	H. B. Nichols	Grass Valley	\$10 00
<i>Calves.</i>			
Pride of Grass Valley	H. B. Nichols	Grass Valley	Diploma.
CLASS III—COWS.			
Lady Searboro	H. B. Nichols	Grass Valley	\$7 50
Udora	H. B. Nichols	Grass Valley	\$5 00
<i>Two Years Old.</i>			
Bonnie Belle	H. B. Nichols	Grass Valley	\$6 00
<i>One Year Old.</i>			
Laurie	H. B. Nichols	Grass Valley	\$3 00
<i>Calf.</i>			
Nellie Bly	H. B. Nichols	Grass Valley	Diploma.
CLASS IV—HOLSTEINS—BULLS.			
<i>Three Years Old and Over.</i>			
Tehama	H. B. Nichols	Grass Valley	\$10 00
<i>One Year Old.</i>			
Tickler	W. C. Jones	Grass Valley	\$3 00
Alfred	F. N. Wheeler	Grass Valley	Diploma.
<i>Calves.</i>			
Barbara Prince	H. B. Nichols	Grass Valley	Diploma.

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
COWS.			
<i>Three Years Old.</i>			
Juanita	H. B. Nichols	Grass Valley	\$7 50
<i>Two Years Old.</i>			
Barbara Maid	H. B. Nichols	Grass Valley	\$6 00
Nitzie	F. N. Wheeler	Grass Valley	\$4 00
<i>One Year Old.</i>			
Infelice	H. B. Nichols	Grass Valley	\$3 00
Flirtation	W. C. Jones	Grass Valley	Diploma.
SWEEPSTAKES.			
Bull Menlo and four cows	H. B. Nichols	Grass Valley	\$10 00
Bull Tehama and four cows	H. B. Nichols	Grass Valley	\$10 00
Bull Jersey Duke and four cows	R. Noell	Grass Valley	\$10 00
GRADED CATTLE.			
<i>Three Years Old and Over.</i>			
Daisy D (Jersey)	C. H. Barker	Grass Valley	\$7 50
Bessie 2d (Jersey)	H. B. Nichols	Grass Valley	\$6 00
Nevada (Holstein)	H. B. Nichols	Grass Valley	\$6 00
COWS.			
<i>One Year Old.</i>			
Cypress (Ayrshire)	H. B. Nichols	Grass Valley	\$5 00
Black Bess (Holstein)	H. B. Nichols	Grass Valley	\$5 00
Sallie (three quarters Jersey)	R. Noell	Grass Valley	\$5 00
<i>Calves.</i>			
Happy New Year (G. Holstein)	H. B. Nichols	Grass Valley	\$3 00
Belle (seven eighths Jersey)	C. H. Barker	Grass Valley	\$3 00
GALLOWAYS—BULLS.			
Lord Marmion	F. N. Wheeler	Grass Valley	\$10 00
Tehama (Jersey), best on ground, additional prize	H. B. Nichols	Grass Valley	\$30 00
THOROUGHbred SHEEP.			
Ram Dick	M. P. Peasley	Grass Valley	\$7 50
Five ewe lambs	M. P. Peasley	Grass Valley	\$5 00
HOGS.			
Boar Billy	R. Noell	Grass Valley	\$5 00
Boar George	Geo. D. Seville	Grass Valley	\$3 00
Sow Jessie	R. Noell	Grass Valley	\$4 00
Sow and pigs	H. Hansen	Grass Valley	\$5 00
POULTRY.			
Best trio Langshans	Chas. Barker	Grass Valley	\$2 50
Best Brown Leghorns	Fred. Spencer	Grass Valley	\$2 50
Best Brahmas	M. P. Peasley	Grass Valley	\$2 50
Best Bronze turkeys	J. Gassoway	Grass Valley	\$2 50
Best Guinea fowls	J. Gassoway	Grass Valley	\$2 50
Best Plymouth Rocks	J. Gassoway	Grass Valley	\$2 50
Best Crested ducks	M. P. Peasley	Grass Valley	\$2 50

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Quartz mill and hoisting works.....	Leonard Weeks (aged 14 years)...	Grass Valley....	Diploma.
Steam engine.....	James Schofield (aged 14 years)...	Grass Valley....	Diploma and \$5 00

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Best double team harness	John McKay	Grass Valley....	Diploma and \$2 50
Best single harness.....	John McKay	Grass Valley....	Diploma and \$2 50
Best double carriage harness	John McKay	Grass Valley....	Diploma and \$2 50
Best bridle harness.....	John McKay	Grass Valley....	Diploma and \$2 50
CLASS II.			
Best gent's saddle	John McKay	Grass Valley....	Diploma.
Best ladies' saddle.....	John McKay	Grass Valley....	Diploma.
Best riding bridle	John McKay	Grass Valley....	Diploma.
CLASS III.			
Best exhibit of blacksmith work.....	James Rowe.....	Nevada City	Diploma.
Best exhibit of worked metal.....	Herbert Fisher	Grass Valley....	.....\$2 50
Best exhibit of blacksmith work.....	J. M. Campbell	Nevada City ....	.....\$2 50
Best exhibit of hand-made horseshoes...	Dan. Morgan	Grass Valley....	Diploma.
Best exhibit of one pair pruning shears..	T. N. Paine.....	Grass Valley....	.....\$2 50
CLASS VII.			
Best exhibit of brooms	C. S. Richardson..	Grass Valley....	Diploma and \$1 50
Best exhibit of rag carpet.....	Levi Fisher.....	Grass Valley....	.....\$1 50

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Best silk embroidery	Mrs. S. C. Hare....	Grass Valley....	.....\$2 50
Best cotton embroidery	Mrs. S. Bethell	Grass Valley....	.....\$2 00
Best arasene embroidery	Miss Bess. Fletcher	Grass Valley....	.....\$2 50
Best outline embroidery	Mrs. Dana Perkins	Rocklin.....	.....\$1 50
Best embroidered table cover.....	Mrs. Sam. Dille....	Grass Valley....	.....\$2 50
Best embroidered table scarf.....	Mrs. S. Wilhelm	Grass Valley....	.....\$2 50
Best embroidered chair seat.....	Miss Bess. Fletcher	Grass Valley....	.....\$2 50
Best embroidered banner.....	Mrs. W. C. Stokes..	Grass Valley....	.....\$2 50
Best embroidered picture.....	Miss. B. Hoskins..	Grass Valley....	.....\$2 50

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best embroidered handkerchief.....	Mrs. S. C. Hare....	Grass Valley....	\$1 00
Best embroidered fine lace work.....	Mrs. J. Jack.....	Nevada City....	\$2 00
Best ribbon work.....	Miss M. Granger....	Grass Valley....	\$2 00
Best braid work.....	Miss Kate Cooley....	Grass Valley....	\$2 00
Best applique work.....	Mrs. Dana Perkins....	Rocklin....	\$2 00
Best chenille work.....	Miss M. Granger....	Grass Valley....	\$2 00
Handsomest crazy quilt.....	Miss Hattie Fisher....	Grass Valley....	\$3 00
Handsomest ornamental plaque or panels.....	Mrs. D. Marwick....	Grass Valley....	\$2 50
Best toilet set.....	Miss Bess, Fletcher....	Grass Valley....	\$2 50
Best hammered brass work.....	Miss Hattie Fisher....	Grass Valley....	\$2 50
Best luster painting on plush.....	Mrs. E. R. Abadie....	Grass Valley....	\$2 50
Handsomest fire screen.....	Mrs. C. Schwartz....	Nevada City....	\$2 50
Handsomest pillow shams.....	M. J. W. Cooley....	Grass Valley....	\$2 00
Handsomest paper flowers.....	Mrs. Wilhelm....	Grass Valley....	\$2 50
Handsomest crocheted skirt.....	Miss E. Walker....	Grass Valley....	\$2 00
Handsomest sofa cushion.....	Mrs. Cosley....	Grass Valley....	\$1 50
Handsomest lambrequin.....	Mrs. S. Wilhelm....	Grass Valley....	\$1 50
Handsomest handkerchief box.....	Miss Bess, Fletcher....	Grass Valley....	\$1 50
Handsomest tidy.....	Mrs. R. E. Scott....	Grass Valley....	\$1 00
Handsomest lamp mat.....	Mrs. G. W. Lawrence....	Nevada City....	\$1 00
Handsomest pincushion.....	Mrs. S. C. Hare....	Grass Valley....	\$1 00
Best display of kensington work.....	Mrs. S. Wilhelm....	Grass Valley....	\$2 50
Best display of canvas work.....	Mrs. M. S. Clutter....	Nevada City....	\$2 00
Best display of darned net work.....	Mrs. L. A. Spaulding....	Nevada City....	\$2 00
Best display of bead work.....	Miss Ray Novitzky....	Grass Valley....	\$1 50
Best display of hair work.....	Miss Amelia Frank....	Grass Valley....	\$1 00
Best display of ladies' underwear.....	Mrs. L. K. Hays....	Grass Valley....	\$3 00
Best display of infants' clothing.....	Mrs. A. B. Dibble....	Grass Valley....	\$3 00
Best ottoman cover.....	Mrs. E. Plummer....	Grass Valley....	\$1 50
Best carriage afghan.....	Mrs. J. A. Stidger....	N. San Juan....	\$2 50
Best child's afghan.....	Mrs. Dana Perkins....	Rocklin....	\$2 00
Best hearth rug.....	Miss Kate Cooley....	Grass Valley....	\$1 50
Best door mat, made of rags.....	Mrs. E. Plummer....	Grass Valley....	\$1 50
Crocheted shawl.....	William Moore....	Grass Valley....	\$2 50
Crocheted bedspread.....	Miss R. Novitzky....	Grass Valley....	\$2 00
Knitted bedspread.....	Mrs. J. M. Campbell....	Grass Valley....	\$2 00
Knitted undervests.....	Mrs. R. Leech....	Grass Valley....	\$1 00
Pair knit silk stockings.....	Mrs. Wm. Steep....	Grass Valley....	\$1 00
Pair knit cotton stockings.....	Mrs. T. Buckett....	Grass Valley....	\$1 60
Pair knit wool stockings.....	Mrs. G. Carson....	Grass Valley....	\$1 00
Largest meritorious display of fancy work by one lady or miss.....	Mrs. Sophie Wilhelm....	Grass Valley....	\$5 00
CLASS II.			
Best display of ladies' clothing.....	Sin Loy.....	Grass Valley....	\$2 50
CLASS III.			
Best silk embroidery.....	Miss Ida Wilhelm....	Grass Valley....	\$2 00
Best cotton embroidery.....	Miss Lavinia McLean....	Grass Valley....	\$1 50
Best worsted embroidery.....	Miss Cecilia Silk....	Grass Valley....	\$1 00
Best patchwork quilt.....	Miss Cecilia Silk....	Grass Valley....	\$1 00
Best crochet work.....	Miss Nettie Scott....	Grass Valley....	\$1 00
Best tatting.....	Miss Nettie Scott....	Grass Valley....	\$1 00
Best braid.....	Miss Nettie Scott....	Grass Valley....	\$1 00
CLASS V.			
Cleaning and dyeing.....	Weldner & Buttolph....	Grass Valley....	\$2 50
Kindergarten work.....	Miss A. V. Spencer....	Grass Valley....	\$2 50
Kindergarten work.....	Miss Bertha Freeman....	Grass Valley....	\$2 50
Best display harness and saddlery.....	John McKay....	Grass Valley....	\$10 00
Best display soft soap.....	Mrs. Jane Sims....	Grass Valley....	Diploma.
Best display groceries.....	Church & Co....	Grass Valley....	\$10 00
Best display confectionery.....	Morgan Bros....	Grass Valley....	\$2 50

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS VI.			
Best display California tobacco.....	D. Bryan	Grass Valley.....	\$2 50
Best display tobacco plant	A. F. Perrin	Grass Valley.....	Diploma.
Best taxidermy work.....	Mrs. Jos. Everett..	Grass Valley.....	\$2 50 and Diploma.

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Best half bushel barley.....	M. P. Peasley	Grass Valley.....	\$2 50
Best half bushel wheat.....	M. P. Peasley	Grass Valley.....	\$2 50
Best rye grass seed.....	J. R. Nickerson	Grass Valley.....	\$2 50
Best half bushel oats.....	C. R. Hill	Grass Valley.....	\$2 50
Best half bushel rye.....	C. R. Hill	Grass Valley.....	\$2 50
Best half bushel sweet corn.....	C. R. Hill	Grass Valley.....	\$2 50
Best exhibit flour.....	Sperry & Co.....	Stockton.....	Diploma.
Best exhibit and greatest variety by one person	C. R. Hill	Grass Valley.....	\$5 00
CLASS II.			
Best Indian corn.....	H. B. Nichols	Grass Valley.....	\$2 50
Second best Indian corn.....	T. F. Van Styke	Grass Valley.....	\$1 50
Best exhibit sweet corn (green).....	H. B. Nichols	Grass Valley.....	\$2 00
First premium potatoes.....	J. Campbell.....	Grass Valley.....	\$2 50
First premium potatoes (one variety)	J. Campbell.....	Grass Valley.....	\$2 50
Second best potatoes.....	G. S. S. Getchell.....	Nevada City.....	\$2 00
Best exhibit tomatoes.....	J. R. Nickerson.....	Grass Valley.....	\$2 00
Second best exhibit tomatoes.....	F. J. Lewis	Newcastle	\$1 00
Best exhibit cabbage.....	J. R. Nickerson.....	Grass Valley.....	\$1 00
Best exhibit watermelons.....	H. B. B. Nichols	Grass Valley.....	\$1 00
Second best exhibit watermelons.....	J. R. Balch	R'h and Ready	\$0 50
Best exhibit muskmelons.....	H. B. Nichols	Grass Valley.....	\$1 00
Second best exhibit muskmelons.....	J. R. Nickerson.....	Grass Valley.....	\$0 50
Best exhibit parsnips.....	M. Thornton.....	Grass Valley.....	\$1 00
Second best exhibit parsnips.....	D. Bryan	Grass Valley.....	\$0 50
Best exhibit carrots.....	H. Waters	Nevada City.....	\$0 50
Second best exhibit carrots.....	M. Thornton.....	Grass Valley.....	\$0 50
Second best exhibit carrots (stock).....	J. H. Campbell.....	Grass Valley.....	\$1 00
Second best exhibit beets (table).....	J. H. Campbell.....	Grass Valley.....	\$1 00
Best exhibit cucumbers.....	J. R. Balch	R'h and Ready	\$1 00
Second best exhibit cucumbers.....	H. Hansen.....	Grass Valley.....	\$0 50
Best exhibit beets.....	J. H. Campbell.....	Grass Valley.....	\$1 00
Second best exhibit beets.....	A. F. Perrin	Grass Valley.....	\$0 50
Second best exhibit beets (stock).....	H. D. Sutton.....	Nevada City.....	\$1 00
Second best exhibit beets (stock).....	Henry Waters.....	Nevada City.....	\$0 50
Best display and greatest variety of vegetables.....	M. Thornton.....	Grass Valley.....	\$5 00
Second best display and greatest vari- ety of vegetables.....	J. H. Campbell.....	Grass Valley.....	\$2 50
Best exhibit onions.....	John Mill.....	Grass Valley.....	\$2 50
Best exhibit peanuts.....	A. F. Perrin	Grass Valley.....	\$1 00
SPECIAL MENTION.			
Best egg plant.....	H. B. Nichols	Grass Valley.....	
Best squash.....	H. B. Nichols	Grass Valley.....	
Best squash (summer crook).....	H. B. Nichols	Grass Valley.....	
Best winter squash.....	T. R. Angove.....	Grass Valley.....	
Second best winter squash.....	John Mill.....	Grass Valley.....	
Best exhibit squashes.....	Henry Waters.....	Nevada City.....	

FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best exhibit egg plant	Leonard Wicks	Grass Valley .....	.....
Best squash	M. Thornton	Grass Valley .....	.....
Best squash	A. F. Perrin	Grass Valley .....	.....
Stalk bamboo	D. Dedman	Grass Valley .....	.....
Sunflowers	Geo. Seville	Grass Valley .....	.....
CLASS III.			
Best vase of cut flowers	Miss A. Fletcher	Grass Valley	\$1 50
Best display of cut flowers	Miss B. Tyrrell	Grass Valley	\$1 50
Best display of cultured grasses	H. B. Nichols	Grass Valley	\$1 50
Best display of hops, over ten pounds	Dr. I. W. Hays	Grass Valley	\$2 50
CLASS IV.			
Best jar of butter, over twenty pounds ..	J. R. Nickerson	Grass Valley	\$5 00
Best exhibit of cheese	Mrs. H. L. Hatch	Indian Springs	\$5 00
Second best exhibit of cheese	John Thorpe	Lincoln	\$2 50
CLASS V.			
Best one dozen doughnuts	Mrs. Jane Sims	Grass Valley	\$1 50
Best biscuits	Mrs. J. J. Dorsey	Grass Valley	\$2 00
Best two loaves wheat bread	Miss Katie Hansen	Grass Valley	\$3 00
Second best two loaves wheat bread	Mrs. J. J. Dorsey	Grass Valley	\$2 00
One dozen doughnuts (special mention) ..	G. E. Burswell	Nevada City .....	.....

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—APPLES.			
Best display and largest variety of apples.	S. N. Stranahan	Nevada City	\$10 00
Second best display and largest variety of apples	J. R. Balch	R'h and Ready	\$8 00
Third best display and largest variety of apples	P. Sutton	Nevada City	\$6 00
Fourth best display and largest variety of apples	J. M. Hales	Grass Valley	\$4 00
Fifth best display and largest variety of apples	Mrs. Mary King	R'h and Ready	\$2 00
PEARS.			
Best display and largest variety	S. N. Stranahan	Nevada City	\$10 00
Second best display and largest variety ..	Jas. Greeley	Newcastle	\$8 00
Third best display and largest variety	H. J. Baldwin	Grass Valley	\$6 00
Fourth best display and largest variety	W. B. Stuart	Grass Valley	\$4 00
Fifth best display and largest variety	J. L. Ritchie	Newcastle	\$2 00
PEACHES.			
Best display and largest variety	Geo. Perkins	Newcastle	\$10 00
Second best display and largest variety ..	G. L. Thielkel	Newcastle	\$8 00
Third best display and largest variety	J. R. Balch	R'h and Ready	\$6 00
Fourth best display and largest variety	G. L. Thielkel	Newcastle	\$4 00
Fifth best display and largest variety	R. R. Dunstan	Grass Valley	\$2 00
PLUMS.			
Best display and largest variety	J. Hales	Grass Valley	\$10 00
Second best display and largest variety ..	P. Drunzer	You Bet	\$8 00
Third best display and largest variety	J. R. Balch	R'h and Ready	\$6 00
Fourth best display and largest variety	Mrs. Mary King	You Bet	\$1 00
Fifth best display and largest variety	Arthur Sims	Grass Valley	\$2 00

TRANSACTIONS OF THE
SIXTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
NECTARINES.			
Best display and largest variety	J. M. Hales	Grass Valley	\$5 00
PRUNES.			
Best display and greatest variety	R. M. Scott	Newcastle	\$6 00
Second best display and greatest variety	J. H. Nile	Smartsville	\$5 00
Third best display and greatest variety	Mrs. T. H. Moore	Grass Valley	\$4 00
FIGS.			
Best display and greatest variety	J. H. Nile	Smartsville	\$5 00
Second best display and greatest variety	J. R. Balch	R'h and Ready	\$3 00
ORANGES.			
Best display	J. H. Nile	Smartsville	\$5 00
TABLE GRAPES—NOT LESS THAN THREE BUNCHES.			
Best and largest variety	J. H. Nile	Smartsville	\$5 00
Second best and largest variety	T. N. Paine	Grass Valley	\$3 00
Best exhibit	C. T. Adams	Newcastle	\$5 00
Second best exhibit	J. H. Nile	Smartsville	\$3 00
Third best exhibit	G. D. Kellogg	Newcastle	\$2 50
Best of one kind	T. N. Paine	Grass Valley	\$2 50
WINE GRAPES.			
Best and largest variety	T. N. Paine	Grass Valley	\$5 00
BERRIES.			
Best exhibit of strawberries	Levi Fisher	Grass Valley	\$3 00
Best exhibit of blackberries	Dr. I. W. Hays	Grass Valley	\$3 00
CLASS II.			
Best exhibit of dried apples	S. N. Stranahan	Nevada City	\$3 00
Best exhibit of dried peaches	S. N. Stranahan	Nevada City	\$3 00
Best exhibit of dried pears	S. N. Stranahan	Nevada City	\$3 00
Best exhibit of dried plums	S. N. Stranahan	Nevada City	\$3 00
Best exhibit of dried prunes	S. N. Stranahan	Nevada City	\$3 00
Best exhibit of dried berries	S. N. Stranahan	Nevada City	\$3 00
Best exhibit of dried beans	S. N. Stranahan	Nevada City	\$3 00
Second best exhibit of dried peaches	Excelsior Orchard	Smartsville	\$2 00
Best display of dried fruit	S. N. Stranahan	Nevada City	\$5 00
CLASS III.			
Best exhibit of almonds	Orange Ranch	Penryn	\$2 50
Best exhibit of English walnuts	W. C. Pope	Grass Valley	\$2 50
Best exhibit of California black walnuts	C. Barker	Grass Valley	\$1 50
CLASS IV.			
Best exhibit of hermetically sealed fruits	Mrs. Chas. Barker	Grass Valley	Diploma and \$5.
Best exhibit of hermetically sealed jellies	Mrs. Chas. Barker	Grass Valley	\$3 00
CLASS V.			
Best port wine	A. B. Driesbach	Indian Springs	
Best claret wine	A. B. Driesbach	Indian Springs	
Best white wine	T. N. Paine	Grass Valley	
Best grape brandy	A. B. Driesbach	Indian Springs	
Best general display of California brandies and wines	A. B. Driesbach	Indian Springs	Diploma and \$10.
Best exhibit of ginger ale	W. T. Richards	Grass Valley	Diploma.
Best exhibit of soda	W. T. Richards	Grass Valley	Diploma.

SEVENTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—FINE ARTS.			
Best landscape, "Nevada City" (oil)	W. J. Straight	Nevada City	\$5 00
Second best, "Sunset, Lake Tahoe" (oil)	Miss Clara West	Grass Valley	\$3 00
Best oil portraiture, "Head"	Miss E. J. Mitchell	Grass Valley	\$5 00
Best water color, "Wild Flowers"	Mrs. W. K. Irving	Colfax	\$3 00
Best on bolting cloth, "Roses"	Miss B. Fletcher	Grass Valley	\$2 50
Best on gauze, "Pansies"	Miss E. J. Mitchell	Grass Valley	\$2 50
Best collection of paintings	Miss Clara West	Grass Valley	\$5 00
Fine original collection	Mrs. H. S. Spalding	Grass Valley	Spe. men.
Largest collection of fruits and flowers	Mrs. Maxfield	Nevada City	Spe. men.
.....	Miss L. Robinson	Jackson, Mich.	Diploma.
CLASS II.			
Best pastel, "Head"	Miss L. Ott	Nevada City	\$3 00
Best crayon drawing	Mrs. M. K. Irving	Colfax	\$2 00
Best pencil drawing	Miss Cora Sutton	Nevada City	\$2 00
Best India ink	Miss L. Ott	Nevada City	\$2 00
Best animal in ink	W. H. Southcott	Grass Valley	\$2 00
CLASS III—JUVENILES.			
Best animal drawing (crayon)	Mast. Carl Brand	Nevada City	\$2 00
Best portraiture (crayon)	Miss Vivie Rector	Nevada City	\$2 50
Second best portraiture (crayon)	Mast. Carl Brand	Nevada City	Diploma.
Best map drawing	Mast. Carl Brand	Nevada City	\$2 50
Second best map drawing	Miss Vivie Rector	Nevada City	Diploma.
Best drawing	Mast. Max Isoard	Nevada City	Diploma.
CLASS IV.			
Best collection of photographic views taken in the district	W. A. Clinch	Grass Valley	Diploma and \$5.
Best collection of photographs	W. A. Clinch	Grass Valley	Diploma.
Fine exhibit	J. R. Hodson	Sacramento	Diploma.
Amateur photographs	E. R. Abadie	Grass Valley	Diploma.

SPEED PROGRAMME.

TUESDAY, SEPTEMBER 6, 1887.

RACE No. 1—TROTTING.

3:00 Class. Purse, one hundred and eighty dollars. First horse, one hundred and eight dollars; second, fifty-four dollars; third, twenty dollars. For horses owned in the district.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Nellie J	G. F. Jacobs	Nevada City.
Fred	A. Morgan	Grass Valley.
Maggie O	W. A. Finley	Nevada City.
Nig	Dan Baker	
Spider	Jno. McCarthy	Grass Valley.

Position at Starting.

1. Maggie O
2. Nellie J
3. Spider
4. Fred

Position at Close.

Maggie O	2	3	3	1	1	1
Fred	1	1	2	3	3	2
Nellie J	3	2	1	2	2	3

Time—3:11½; 3:08½; 3:06½; 3:01; 3:03½; 3:06.

RACE No. 2—TROTTING.

2:30 Class. Purse, five hundred dollars. First horse, three hundred dollars; second, one hundred and fifty dollars; third, fifty dollars. Open to all. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Geronimo	C. A. Durfee	Los Angeles.
Col. Hawkins	S. C. Tryon	Sacramento.
Florence R	G. W. Giffin	Woodland.
Kate Ewing	Lee Shaner	San Francisco.
Flora G	J. Dawn	Salinas.

Position at Starting.

1. Florence R
2. Col. Hawkins
3. Kate Ewing
4. Geronimo
5. Flora G

Position at Close.

Kate Ewing	1	1	1
Florence R	4	2	2
Col. Hawkins	2	5	5
Geronimo	5	3	3
Flora G	3	4	4

Time—2:26; 2:25; 2:27.

RACE NO. 3—TROTTING.

Special trotting. Purse, one hundred and fifty dollars. First horse, ninety dollars; second, forty-five dollars; third, fifteen dollars. For two-year olds. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sutter Boy.....	W. P. Harkey.....	Yuba City.
Franklin.....	A. Tietjens.....	Sacramento.
Clara Q.....	S. C. Tyron.....	Sacramento.

Position at Starting.

1. Clara Q.....
2. Sutter Boy.....
3. Franklin.....

Position at Close.

Clara Q.....	2	1	1	1
Sutter Boy.....	1	3	3	2
Franklin.....	3	2	2	3

Time—2:36; 2:39 $\frac{1}{4}$; 2:37; 2:39 $\frac{1}{2}$.

WEDNESDAY, SEPTEMBER 7, 1887.

RACE NO. 4—RUNNING.

Special running. First horse, four hundred dollars; second, seventy-five dollars; third, fifty dollars. Three hundred dollars added. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dave Douglass.....	D. Dennison.....	Sacramento.
Sir Thad.....	Pat Riley.....	Grass Valley.
Daisy D.....	Cockerill Bros.....	Sacramento.
Mayblossom.....	W. P. Todhunter.....	Sacramento.

Position at Starting.

1. Dave Douglass.....
2. Sir Thad.....
3. Daisy D.....
4. Mayblossom.....

Position at Close.

Daisy D.....	1	1
Dave Douglass.....	2	2
Mayblossom.....	3	3

Time—1:43; 1:44 $\frac{3}{4}$.

RACE NO. 5—RUNNING.

District special. Purse, one hundred and fifty dollars. First horse, ninety dollars; second, forty-five dollars; third, fifteen dollars. Mile heats; two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rock.....	W. P. Todhunter.....	Sacramento.
Lige Clark.....	L. Downer.....	Oakland.
Edwin F.....	D. Dennison.....	Sacramento.

Position at Starting.

1. Rock.....
2. Edwin F.....
3. Lige Clark.....

Position at Close.

Lige Clark.....	1	1
Edwin F.....	2	2
Rock.....	dis.	

Time—1:45; 1:47.

RACE NO. 6—PACING.

Purse, five hundred dollars. First horse, three hundred dollars; second, one hundred and fifty dollars; third, fifty dollars. Free for all. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Charlie Brown	H. P. Brown	Salinas.
Arrow	C. A. Durfee	Los Angeles.
Bracelet	J. R. Hodson	Sacramento.

*Position at Starting.**Position at Close.*

1. Bracelet	Arrow	1	1	1
2. Arrow	Bracelet	2	2	2
3. Charlie Brown	Charlie Brown	3	3	3

Time—2:23½; 2:26; 2:29.

THURSDAY, SEPTEMBER 8, 1887.

RACE NO. 8—TROTTING.

District trotting. Purse, two hundred and fifty dollars. First horse, one hundred and eight dollars; second, fifty-four dollars; third, eighteen dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lizzie Mack	M. P. Peaslee	Grass Valley.
Dinah	Geo. Dickinson	Grass Valley.
Balley	S. D. Avery	Grass Valley.
Coon	Geo. F. Jacobs	Nevada City.

*Position at Starting.**Position at Close.*

1. Coon	Dinah	3	2	1	1	1
2. Dinah	Lizzie Mack	1	1	2	3	2
3. Lizzie Mack	Coon	2	3	3	2	3

Time—2:44; 2:45; 2:42; 2:43½; 2:44.

RACE NO. 9—TROTTING.

Purse, five hundred dollars. First horse, two hundred and seventy dollars; second, one hundred and thirty-five dollars; third, forty-five dollars. Open for all. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Alex Button	G. W. Woodard	Yolo.
Longfellow	W. H. Seal	Mayfield.
Artist	J. R. Hodson	Sacramento.
Adrian	J. Dawn	Salinas.

*Position at Starting.**Position at Close.*

1. Longfellow	Longfellow	2	2	1	1	1
2. Alex Button	Artist	3	1	3	2	2
3. Artist	Alex Button	1	3	2	3	3

Time—2:26½; 2:26½; 2:25; 2:26; 2:26½.

RACE NO. 10—RUNNING.

Purse, one hundred dollars. First horse, sixty dollars; second, thirty dollars; third, ten dollars. One half mile; best two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie R	E. Flitner	Visalia.
Norton	F. Jones	
Blue Bonnet	D. Dennison	Sacramento.

Position at Starting.	Position at Close.
1. Norton	Minnie R
2. Blue Bonnet	Blue Bonnet
3. Minnie R	Norton

Time—0:49; 0:49½; 0:49.

FRIDAY, SEPTEMBER 9, 1887.

RACE NO. 11—RUNNING.

Purse, two hundred dollars. First horse, one hundred and twenty dollars; second, sixty dollars; third, twenty dollars. Open for all. Mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dave Douglass	D. Dennison	Sacramento.
Mayblossom	W. P. Todhunter	Sacramento.
Lige Clark	L. Donner	Oakland.

Position at Starting.	Position at Close.
1. Mayblossom	Dave Douglass
2. Dave Douglass	Mayblossom
3. Lige Clark	Lige Clark

Time—1:45½; 1:44¾.

RACE NO. 12—RUNNING.

Purse, one hundred and fifty dollars added; ten dollars forfeit; twenty-five dollars entrance. First horse, one hundred and eighty dollars; second, fifty dollars; third, twenty-five dollars. Free for all. Three fourths mile heats and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Blue Bonnet	D. Dennison	Sacramento.
Sir Thad	Pat. Riley	Grass Valley.
Daisy D	Cockerill Bros.	Salinas.
Mayblossom	W. P. Todhunter	Sacramento.
C. S. Rock	W. P. Todhunter	Sacramento.
Minnie R	E. Flitner	Visalia.

Position at Starting.	Position at Close.
1. Minnie R	Daisy D
2. Daisy D	Blue Bonnet
3. Blue Bonnet	Minnie R

Time—1:16; 1:17.

TRANSACTIONS OF THE

RACE No. 13—PACING.

2:25 Class. Purse, five hundred dollars. First horse, three hundred dollars; second, one hundred and fifty dollars; third, fifty dollars. Open for all. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Almont Patchen.....	W. M. Billups.....	Colusa.
Chapman.....	Lee Shaner.....	San Francisco.
Prince.....	S. K. Trefry.....	Sacramento.
Arrow.....	C. A. Durfee.....	Los Angeles.
Charlie Brown.....	H. P. Brown.....	Salinas.

Position at Starting.

1. Prince.....
2. Arrow.....
3. Charlie Brown.....

Position at Close.

- | | | | |
|--------------------|---|---|---|
| Arrow..... | 1 | 1 | 1 |
| Charlie Brown..... | 2 | 2 | 3 |
| Prince..... | 3 | 3 | 2 |

Time—2:29; 2:26; 2:27½.

RACE No. 14—RUNNING.

District saddle horse race. First horse, thirty-five dollars; second, seventeen dollars and one half; third, ten dollars and one half. Five dollars entrance; fifty dollars added. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Flora B.....	B. Penhall.....	Grass Valley.
Dolly Dimple.....	James Hughes.....	Grass Valley.
Jimmers.....	S. Benoit.....	Grass Valley.
Hector.....	M. P. Peaslee.....	Grass Valley.

Position at Starting.

1. Flora B.....
2. Jimmers.....
3. Hector.....

Position at Close.

- | | |
|--------------|---|
| Flora B..... | 1 |
| Hector..... | 2 |
| Jimmers..... | 3 |

Time—1:51¾.

SATURDAY, SEPTEMBER 10, 1887.

RACE No. 15—TROTTING.

District yearlings. Purse, one hundred dollars. First horse, fifty-four dollars; second, twenty-seven dollars; third, nine dollars. Half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sidney J.....	Geo. F. Jacobs.....	Nevada City.
Thomas F.....	Wm. Finley.....	Nevada City.
Brunswick.....	J. R. Nickerson.....	Auburn.
Duroc.....	M. C. Hogan.....	North San Juan.

Position at Starting.

1. Duroc.....
2. Brunswick.....
3. Sidney J.....
4. Thomas F.....

Position at Close.

- | | | |
|---------------|---|---|
| Duroc..... | 1 | 1 |
| Sidney J..... | 2 | 2 |

Time—1:45; 1:49¾.

RACE NO. 16—TROTTING.

240 Class. Purse, five hundred dollars. First horse, three hundred dollars; second, one hundred and fifty dollars; third, fifty dollars. Open for all. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Daisy A.	D. E. Knight	Marysville.
Geronimo	C. A. Durfee	Los Angeles.
Col. Hawkins	S. C. Tryon	Sacramento.
Ross S.	R. C. Sargent	Lodi.
Rosie Mc	G. W. Woodard	Yolo.
Franklin	A. Tietjens	Sacramento.
Alfred S.	W. H. Seal	Mayfield.
Manzanita	J. Dawn	Salinas.

Position at Starting.

1. Manzanita	Alfred S.
2. Geronimo	Col. Hawkins
3. Col. Hawkins	Manzanita
4. Alfred S.	Ross S.
5. Ross S.	

Position at Close.

1	1	1
2	2	2
3	3	3
4	4	4

Time—2:30; 2:29 $\frac{1}{2}$; 2:28 $\frac{1}{4}$.

RACE NO. 17—TROTTING.

Special trotting. Purse, two hundred dollars. First horse, one hundred and twenty dollars; second, sixty dollars; third, twenty dollars. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Daisy A.	D. E. Knight	Marysville.
Wallace G.	P. Garratt	
Flora G.	J. Dawn	Salinas.
Florence R.	G. W. Giffin	Woodland.
Artist (to cart)	J. R. Hodson	Sacramento.

Position at Starting.

1. Florence R.	Florence R.
2. Flora G.	Artist
3. Daisy A.	Wallace G.
4. Wallace G.	Flora G.
5. Artist	

Position at Close.

1	3	1	1
3	1	2	2
2	2	3	3
4	4	4	4

Time—2:26 $\frac{1}{4}$; 2:26 $\frac{1}{4}$; 2:26 $\frac{1}{4}$; 2:28.

RACE NO. 18—SPECIAL RUNNING.

Purse, one hundred dollars. First horse, sixty dollars; second, thirty dollars; third, ten dollars. Five eighths of a mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Edwin F.	Dan. Dennison	Sacramento.
Rock	W. A. Todhunter	Sacramento.
Bay Rum	E. Flittner	Visalia.

Position at Starting.

1. Bay Rum	Edwin F.
2. Rock	Rock
3. Edwin F.	

Position at Close.

1	2	1
2	1	2

Time—1:04; 1:04 $\frac{3}{4}$; 1:04.

LADIES TOURNAMENT.

FRIDAY, SEPTEMBER 9, 1887.

Purse, forty dollars. First prize, twenty dollars; second prize, ten dollars; third prize, five dollars; fourth prize, five dollars.

Name.	P. O. Address.
Mrs. J. L. Breed.....	Grass Valley.
Miss A. Kemler.....	Carson City, Nevada.
Miss J. Kemler.....	Carson City, Nevada.
Miss Barrett.....	Grass Valley.
<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Mrs. J. L. Breed.....	Miss A. Kemler..... First Prize.
2. Miss A. Kemler.....	Miss J. Kemler..... Second Prize.
3. Miss J. Kemler.....	Miss Barrett..... Third Prize.
4. Miss Barrett.....	Mrs. J. L. Breed..... Fourth Prize.

TRANSACTIONS

OF THE

EIGHTEENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Alpine, Mono, and Inyo.

REPORT.

OFFICE OF SECRETARY OF AGRICULTURAL ASSOCIATION No. 18,)
INDEPENDENCE, INYO COUNTY, November 23, 1887. }

E. F. SMITH, *Esq.*, *Secretary State Agricultural Society, Sacramento:*

SIR: As required by Section 9 of the Act to provide for the management of the State Agricultural Society, passed April 15, 1880, I herewith submit report of the transactions of Agricultural District Number Eighteen, comprising the counties of Alpine, Mono, and Inyo. Said district was created by an Act of the Legislature, approved March 9, 1887. The Directors appointed by the Governor met at Independence, on the thirty-first day of March, 1887, and organized by the election of A. R. Conklin, as President; O. I. Mavis, Treasurer; and C. Mulholland, Secretary. During the ensuing months a tract of ground was secured one half mile southeast of limits of Independence; here a race track was made, one mile in circumference; judges' and grand stands were built, and the whole put in good condition. Within the limits of Independence, five acres of ground were bought and inclosed by a tight board fence seven feet high; within this inclosure stalls were built for horses and cattle, and pens for sheep, swine, etc. On the same ground a good, solid building was also erected for a pavilion: this is sixty by forty feet. These improvements have cost over \$6,000.

A fair was held at Independence, October tenth till October fourteenth, inclusive. Herewith please find a full report of stock and articles exhibited; also of premiums paid. As all the premiums offered were paid, I will presume it is not necessary to recapitulate; the list given containing all that was "offered," and also all that was "paid."

I am not possessed of the facts in relation to the "development and extent of the industries, products, and resources" of Alpine and Mono Counties. I can only say of Alpine that it is known to contain rich mineral resources, yet very slightly developed. It has also a good deal of valuable timber land, and much fine pasturage for sheep and cattle. A valuable dairy interest could also be established there, but very little in that direction has yet been accomplished.

Mono County is best known as containing the town of Bodie, and mines in its vicinity. These mines have added millions of dollars to the wealth of the State. Mono has thousands of acres of good farming land. During the summer months great numbers of cattle, horses, and sheep find excellent grazing in the higher mountain valleys. The better development of the resources of the county would enable it to support four or five times the present population.

Of the three counties comprising the Eighteenth District, Inyo is by far the largest in area. It contains about twelve thousand square miles. The chief farming part of the county is Owens Valley. This is, in round numbers, one hundred miles long, with an average width of about seven miles. The soil is rich, the climate excellent, and has no superior for health. The valley contains at least three hundred thousand acres of arable land; at present about one hundred and fifty thousand acres, or less than half, is inclosed. The chief good of establishing the Eighteenth Agricultural

District, will be the further settlement and improvement of the agricultural lands of the district. Already this influence is visible in improvements, particularly in the habits of the settlers themselves; they needed stirring up to greater industry; they needed new ideas; they had long lived isolated and were backward in all things. There is quite a change for the better.

During the summer canals were projected and are now in process of construction, that will irrigate about seventy-five thousand acres of land. By next spring some of these works will be so far completed that water will be supplied to many thousand acres, and settlers can begin to cultivate and improve land. The Carson and Colorado Railroad traverses Owens Valley, connecting with the Virginia and Truckee Railroad, and this with the Central Pacific at Reno. The Carson and Colorado will, it is expected, soon be extended to Los Angeles. The output from the mines of Inyo, mostly silver and lead, is estimated to exceed a million dollars each year. In Owens Valley are one thousand five hundred and ninety stands of bees, valued at nearly two dollars each.

The county is well suited to the growth of grapes and making of raisins, though little has yet been done in this direction. Last year seven hundred and two gallons of brandy were made.

During the year four thousand two hundred and eighty-nine calves were dropped in Inyo County. The stock cattle number seven thousand one hundred and ten. Colts for the year, one thousand two hundred and sixty-two. Thoroughbred bulls and cows imported during the year, twenty-two. During the season about five hundred thousand sheep pasture in or pass through Owens Valley; most of these come from Fresno, Tulare, and Kern Counties. From the valley six thousand one hundred pounds of honey were sold in the year. Wheat product, one thousand and eighty cents; oats, five hundred cents; barley, six hundred and sixty-five cents; hogs, nine thousand six hundred and twenty head; horses, three thousand one hundred and seventy head. These figures are taken from the assessment roll, and are well known to be far under the truth. No statistics are available of the yield of fruit. All the fruits of the temperate zone are grown, including figs and almonds, and are of unsurpassed excellence. Strangers who attended our fair, said they had never, in any county, seen such apples, pears, peaches, grapes, etc., as were shown. The fruit production of Owens Valley is destined to attain great proportions.

The water of Owens Lake carries a very high proportion of soda. During the year works have been built at the lake, vast tanks, or ponds constructed for evaporating the water, and several thousand tons of marketable soda obtained. The success of the experiments being now demonstrated, the gathering of the soda will be done more extensively.

Apprehensive of making this report too long deters me from continuing further. In fact, I am not at all certain if this is such a report as is wanted or usually given from agricultural districts. If anything different is wanted, please inform me.

Respectfully,

C. MULHOLLAND,
Secretary Agricultural District, No. 18.

EXHIBITS AT THE FAIR—1887.

Standard trotter, stallion, aged, Roderick Dhu.

Standard trotter, mare, aged, Lady Nelson.

Standard trotter, colt, Flash.

Roadster trotter, stallion, two years old, Valentine.

Roadster, stallion, two years old, Barnie.

Roadster, stallion, four years old, Riley.

Roadster, stallion, ten years old, Bismarck.

Roadster, filly, two years old, Biddy.

Stallion and family, Bismarck, Jr., Valentine, Queen, and Biddy.

Roadster team, geldings, four years old.

Graded horse, mare, three years old, Jessie.

Carriage teams, gelding and mare, aged.

All work, Norman mare, two years old, Daisy.

All work, Norman filly, two years old, Belle.

Stallion and family, all aged, Roderick, Sam, and Ida.

Stallion, three years old, Prince.

Stallion, one year old, Sam.

Stallion, two years old, Young Hero.

Stallion, two and one half years old, Dick.

Mare, seven years old, Snyder.

Stallion, seventeen years old, Joe Gale.

Mare, six years old, Nelly R.

Mare, six years old, Sally.

Stallion, one year old, Billy.

Filly, six months old, Jupe.

FAMILY.

Mare, fifteen years old, Black Era.

Mare, four years old, Brown F.

Mare, seven years old, Pet.

Mare, four months old, Beauty.

Stallion, one year old, Young Muldoon.

Mare, five months old, Daisy.

BUGGY TEAMS.

Horse, four years old, Charley.

Horse, four years old, Jack.

Horse, three years old, Hero.

Horse, three years old, George.

Mare, eight years old, Lucy.

Mare, ten years old, Maud J.

Horse, eight years old, Prince.

Horse, ten years old, Frank.

SADDLE HORSES.

Horse, ten years old, Wade.

Horse, five years old, Chappell.

Mare, eight years old, Flossie.

Horse, eight years old, Pinto.

DRAFT HORSES.

Mare, three years old, Bessie.

Stallion, fifteen years old, Sam.

Stallion, two years old, Normy.

Stallion, two years old, Ted.

Stallion, fourteen years old, Alex.

FAMILY.

Stallion, three years old, Sullivan.

Mare, seven years old, Lady Clide.

Stallion, two months and twenty days old, Donald.

Mare, two years old, Lady Clide, Jr.

SWEEPSTAKES.

Stallion, five years old, Roderick.

Mare, three years old, Jessie.

Mare, six years old, Ida.

Stallion, four years old, Albenton.

Mare, seven years old, Lady Clide, Sr.

Stallion, two months and twenty days old, Donald.

JACKS.

Stallion, seven years old, Harry Paterson.

Mare, six years old, Lizzie Boyd.

MULES.

Lizzie, one year old

Sam, four months old.

CATTLE—BULLS.

Holstein bull, five years old, Tom.

Hereford, seven months old, Mazourka, Jr.

COWS.

Cherry, three years old.

Silky, two years old.

Jennie, nine months old.

Jennie, nine months old.

SHEEP.

Five graded Merinos.

GOATS.

Four Angora goats.

SWINE.

Boar, under one year old.

Sow, under one year old, and family.

Boar, four months old, graded Berkshire.

Sow, four months old, graded Berkshire.

POULTRY.

Bantams, two Sebrights.

Three Wyandotte chickens, five months old.

One goose.

One gander.

One Plymouth Rock rooster.

Rooster and hen.

AGRICULTURAL PRODUCTS.

One sack of buckwheat.

One sack of rye.

Corn on the cob.

Sheaf of oats.

Two sacks of flour, fifty pounds each.

One sack of wheat.
 One sack of barley.
 One sack of oats.
 One sack of rye.
 One sack of alfalfa seed.
 Four varieties of corn.
 One sack of oats, one hundred pounds.
 Sheaf of oats.
 Ears of corn.
 Sack of shelled corn.
 Sheaf of wheat.
 One sack of alfalfa seed, fifty pounds.
 Samples of corn, new varieties.
 Two sacks of wheat, two varieties.
 One sack of shelled corn.
 Specimens of corn on ear.
 Specimens of corn, two varieties.
 Specimens of green corn, second crop this season.
 One sack of wheat.
 Specimens of corn on ear.

VEGETABLES.

Specimens of sweet potatoes.
 White potatoes, three varieties.
 Peanuts.
 Beets.
 Cow pumpkins.
 One half dozen crookneck squash.
 One half dozen small squash.
 One half dozen watermelons.
 Variety of red beans, new.
 Specimens of red cabbage.
 Specimens of white cabbage.
 Specimens of cauliflower.
 Specimens of parsnip.
 Specimens of muskmelon.
 Specimens of citronmelon.
 Specimens of watermelon.
 Specimens of pumpkin.
 Specimens of sweet corn.
 Specimens of tomatoes.
 Specimens of beans in pod.
 Specimens of onions.
 Specimens of green Chili peppers.
 Specimens of peanuts.
 Specimens of black wax beans.
 Specimens of brown beans.
 Specimens of pea beans.
 Specimens of Lima beans.
 Specimens of Russian beans.
 Specimens of lentils.
 Specimens of cucumbers.
 Celery.
 Beets.
 Parsley in pot.
 Red Chili peppers in pot.
 Tree of castor beans.
 Kohl rabi.
 Tobacco plants.
 Tomatoes.

DISPLAY OF AGRICULTURAL PRODUCTS—SPECIAL.

Specimens of tomatoes, two varieties.
 Specimens of squashes, three varieties.
 Specimens of onions, three varieties.
 Specimens of corn, two varieties.
 Specimens of red Chili peppers.
 Specimens of cabbage.
 Specimens of carrots, twelve varieties.
 Specimens of sweet potatoes.
 Specimens of peanuts.

Specimens of green string beans.
 Specimens of Persian muskmelon.
 Specimens of mangel-wurzel.
 Specimens of almonds in shell.
 Specimens of squash.
 Specimens of white potatoes, three varieties.
 Specimens of carrots.
 Specimens of parsnips.
 Specimens of ruta bagas.
 Specimens of horseradish.
 Specimens of onions.
 Specimens of gourds.
 Specimens of squash, two varieties.
 Specimens of watermelon.
 Specimens of eggplant.
 Specimens of sunflowers.
 Specimens of osage orange.
 Specimens of sugar beets.
 Specimens of corn on ear.
 Specimens of table beets.
 Specimens of early rose potatoes.
 Specimens of carrots.
 Specimens of butter beans.
 Specimens of potatoes and carrots.
 Specimens of tomatoes.
 Specimens of beets, raised without irrigation.
 Specimens of radish.
 Specimens of cushaw squash.
 Specimens of cabbage.
 Specimens of kohlrabi and onions.
 Specimens of potatoes and beans.
 Specimens of potatoes, fifty pounds Early Rose.
 Specimens of potatoes, one hundred pounds Peerless.
 Specimens of cauliflower.

SPECIAL DISPLAY BY ONE PERSON.

Specimens of carrots, two varieties.
 Specimens of beets, two varieties.
 Specimens of parsnips and cabbage.
 Specimens of green Chili peppers and cantaloupes.
 Specimens of tomatoes, and one sack of Bayo beans.
 One sack of potatoes.
 Ten pounds of white beans.
 Specimens of cabbage, two varieties.
 Specimens of squashes, three varieties.
 Specimens of beets, three varieties.
 Specimens of onions, three varieties.
 Specimens of cabbage, one variety.
 Specimens of pumpkins.
 Specimens of tomatoes.
 Specimens of beets and tomatoes.
 Specimens of sweet potatoes and red peppers.
 Specimens of horse beans.

HONEY AND APIARY DISPLAY.

Sections of comb honey.
 Extracted honey in cans, various sizes.
 Liquid honey in glass jar.
 Candied honey in glass jar.
 Shipping case for comb honey.
 Frame of sections, with comb foundation.
 Frame of sections, finished by bees.
 Sections with comb foundation, various stages.
 Sections formed.
 Blank sheet of comb foundation.

EXHIBITS AT THE FAIR—Continued.

Heavy and light comb foundation.
Machine for making comb foundation.
Cutter and fastener for comb foundation.
Cap fitted for comb honey.
Super spring and hook, invented by exhibitor.
Device for removing sections, invented by exhibitor.
Beeswax and smoker.
Labels, literature, circulars.
Implements for making tin cans.
Brood frames in parts and made up.
Gauge blocks for brood frames.
Wide frame with separators.

PRESERVES, ETC.

Apple jelly in pots.
Pickles in bottles.
Plums in brandy, two bottles.
Preserved pears, nine bottles.
Preserved figs, one bottle.
Preserved nectarines, one bottle.
Preserved currants, one bottle.
Preserved figs, dried, box.
Preserved fruits, various, nineteen jars.
Jellies, various, five jars.
Specimen of sun-dried peaches.
Specimen of sun-dried apples.
Specimen of sun-dried pears.
Specimen of preserved fruits, five jars.
Specimen of jellies, three jars.
Butter, five rolls.
Eggs, one dozen.
Dried apples.
Canned fruits, seventeen bottles.
Preserves, various, four bottles.
Pickles, various, two bottles.
Canned fruits, various, fourteen bottles.
Jellies, various, four jars.
Fruits, various, eight jars.
Ketchup, various.
Canned fruits, various, fourteen jars.
Jellies, various, seven jars.
Lard, one can.
Wine, four bottles.
Wine vinegar, one bottle.
Canned fruits, various, eleven jars.
Jellies, various, two jars.
Pickles, various, two jars.
Tomato ketchup, one variety.
Comb honey in sections.
Sun-dried peaches.
Sun-dried pears.
Lard, two cans.
Lots, of ham and bacon.
Canned fruits, various, seven jars.
Jelly, one jar.
Canned fruits, various, eight jars.
Peaches in alcohol.
Sun-dried raisins.
Dried grapes, one sack.
Zinfandel wine in bottles.
Canned fruits in jars.
Jelly in jar.
Jelly, various, sixteen jars.
Lard, two cans.
Apples, seven varieties.
Figs, green.
Grapes, eight varieties.
Peaches, three varieties.
Strawberries and green figs.
Apples and sun-dried peaches.

Apples, seventeen varieties.
Pears, twelve varieties.
Grapes, eleven varieties.
Plums, four varieties.
Figs, one variety.
Quinces, two varieties.
Apples, five varieties.
Plums, one variety.
Dried peaches.
Pears, one variety.
Peaches and soft-shelled almonds.
Limb of apple tree, loaded.
Apples, two varieties.
Pears, one variety.
Apples, sixteen varieties.
Peaches, two varieties.
Ground cherries.
Apples, one variety.
Pears, one variety.
Apples, nineteen varieties.
Pears, three varieties.
Figs, two varieties.
Walnuts and grapes.
Apples, two varieties.
Grapes, one variety.
Apples, three varieties.
Apples, two varieties.
Grapes, three varieties.
Peaches, Late Crawford.
Apples, thirteen varieties.
Apples, crab, two varieties.
Pears, two varieties.
Quince, two varieties.
Figs, two varieties.
Peaches, two varieties.
Apples, twelve varieties.
Apples, ten varieties.
Pears, one variety.
Walnuts, one variety.
Samples of apples, pears, and walnuts.
Apples, nine varieties.
Pears, four varieties.
Peaches, two varieties.
Grapes, two varieties.
Grapevines, showing growth.
Antique spurs.
Spurs made in district.
Fancy spring bridlebit.
Miners' candlesticks.
Silver-mounted bridle.
One pair of gent's boots, made in district.

NEEDLEWORK.

Fancy needlework in colors, wool.
Fancy needlework in flowers, wool.
Flower embroidered plaque, wool, on velvet.
Embroidered organ cover, in wool.
Embroidered sofa tidies, in wool.
Spanish needlework.
Spanish needlework, ancient specimens.
Fancy head coverings, in wool.
Handkerchief, Spanish needlework.
Fancy head coverings, in wool.
Skirt, Spanish needlework.
Two varieties crochet lace.
One patchwork quilt.
Fancy needlework, kensington embroidery.
Panel in needlework, and kensington hand painting.
Kensington embroidery, two pieces.
Kensington stitch table cover.
Knitted quilt.

Crochet cover.
 Needlework and embroidery.
 Needlework and embroidery, bag.
 Two picture frames, carved wood.
 Carved wood workbox.
 Crochet quilt and crazy quilt.
 Fancy wool rug, in colors.
 Crazy sofa pillow.
 Two embroidered towels.
 Toilet set, needlework.
 Needlework, jacket.
 Lace embroidered skirt.
 Crochet slip and lace bib.
 Three specimens crochet lace.
 Embroidered apron.
 Fancy-work quilt.
 Flower basket and flowers.
 Lace tidy and painted lace tie.
 Kensington banner, hand painted.
 Painted drapery for chair.
 Crochet tidy and braided pillow sham.
 Silk collar, crochet cap, wool-work shawl.
 Crazy quilt, two crazy pillow shams.
 Crazy sofa tidy, applique tidy.
 Two needlework caps, hand-painted pin-cushion.
 Two hand-painted perfume bottles.
 One hand-painted handkerchief case.
 Patchwork quilt.
 Knitted scarf for lounge.
 Embroidered table cloth.
 Two specimens of knitting.
 One log cabin quilt.
 Spray of flowers, in hair.
 Crazy sofa patchwork.
 Sofa pillow.
 Embroidered pincushion.
 White crochet opera shawl.
 Two pillow shams, embroidered.
 Patchwork quilt.

PAINTINGS, ETC.

Crayon drawing, neutral tint.
 India ink drawing.
 Pastelle drawing.
 Two water-color paintings, match subjects.
 One oil painting, landscape.
 One oil painting on bell, landscape.
 One oil painting, ship at sea.
 One oil painting, Cape Horn on the Columbia.

One oil painting, Bridal Veil Falls, Yosemite.
 Three crayon drawings.
 One oil painting, portrait of a lady.
 One crayon drawing, portrait of a gentleman.
 Three oil paintings, landscape.
 One oil painting, fruit piece.
 One oil painting, flowers.
 One oil painting on panel, basket of fruit.
 Two plaques, painted in oil.

MINERALS, ETC.

Gypsum, one sack.
 Gold and copper ores, twelve specimens.
 Cabinet of mineral specimens.
 Silver and lead ores, cinnabar.
 Specimens of gold ore.
 Rare coins.
 Silver and lead ores.
 Gold quartz, rich specimens.
 Silver and lead ores.
 Native silver, rich specimens.
 Rich gold ores.
 Rich specimens of gold ores.
 Silver and lead ores.
 Curious rock formations.
 Cabinet of minerals.

BREAD, CAKES, ETC.

Basket of cakes.
 Two loaves of bread, wheat.
 Two loaves of bread, rye.
 One plate of light biscuit.
 Two loaves of corn bread.

SPECIAL EXHIBITS.

Improved kitchen table.
 Showcase and petrifications.
 Carved walking stick.

MARBLE.

Monument of white marble.
 Specimens of various marbles.
 Table top, moss agate marble.

FANCY WORK.

Picture frame, carved.
 Wooden spoons, carved.
 Hops on vines, showing growth.

PREMIUMS AWARDED—1887.

STANDARD TROTTERS.		GOATS.	
Stallion, five years old	\$30 00	Angora goats	\$5 00
Colt, one year old	10 00	SWINE.	
Mare, ten years old	20 00	Boar, under one year	\$2 50
Stallion, two years old	10 00	Sow, under one year	2 50
Stallion, aged	20 00	Boar and sow, graded	2 50
Stallion and family of three	20 00	POULTRY.	
ROADSTERS.		Wyandotte chickens	\$5 00
Two geldings, four years, each	\$10 00	Plymouth Rock	2 50
GRADED HORSES.		FLOUR, ETC.	
Mare, three years old	\$10 00	Two sacks of flour	\$5 00
CARRIAGE TEAMS.		One sack of oats	3 00
Horse and mare, aged	\$10 00	Alfalfa seed	2 50
HORSES OF ALL WORK.		One sack of wheat	3 00
Stallion, three years old	\$20 00	One sack of barley	3 00
Stallion, two years old	10 00	One sack of corn	3 00
Stallion, one year old	5 00	VEGETABLES, ROOTS, ETC.	
Mare and colt	20 00	Pumpkins	\$1 00
Mare, seven years old	15 00	Watermelons	1 00
Mare, two years old	7 50	Onions	1 00
Mare, two years old	7 50	Carrots	1 00
BUGGY TEAMS.		Turnips	1 00
Geldings, three years, each	\$20 00	Early rose potatoes	2 00
Gelding, aged	10 00	Peerless potatoes	2 00
SADDLE HORSES.		Best display of agricultural products	20 00
Gelding, nine years old	\$20 00	Parsnips	1 00
Gelding, five years old	10 00	Cabbage	1 00
DRAFT HORSES.		Cantaloupes	1 00
Mare and family of three	\$20 00	Bayo beans	1 00
Mare, three years old	10 00	White beans	1 00
Mare and colt	15 00	Squash	1 00
Stallion, aged	20 00	Beets	1 00
Stallion, two years old	15 00	Tomatoes	1 00
Horse colt, three months old	5 00	Sweet potatoes	1 00
SWEEPSTAKES.		Red peppers	1 00
Stallion, five years old	\$50 00	MISCELLANEOUS.	
Mare, seven years old	50 00	Honey	\$5 00
JACKS.		Apiary display	5 00
Stallion jack, aged	\$10 00	Preserves	5 00
Jack and family	15 00	Canned fruit	5 00
BULLS.		Butter	2 50
Buli, five years old	\$10 00	Pickles	2 50
Bull calf	5 00	Jellies	5 00
COWS.		Lard	2 00
Cow, three years old	\$10 00	Bacon	5 00
Cow, two years old	5 00	Hams	5 00
Heifer calf	5 00	Wine	5 00
SHEEP.		Apples	5 00
Graded merino	\$5 00	Grapes	2 50
		Quinces	2 00
		Plums	2 50
		Dried peaches	1 50
		Dried apples	1 50
		Green pears	2 50
		Dried fruits (varieties)	2 00
		Peaches	2 50

PREMIUMS AWARDED—Continued.

Grapes (second premium).....	\$1 50	One sack of buckwheat.....	\$2 00
Apples (second premium).....	2 50	One sack of rye.....	2 00
Gents' boots.....	2 00	Crochet cover.....	2 50
Crochet quilt.....	10 00	Spanish needlework.....	2 50
Patchwork quilt.....	10 00	RACES, ETC.	
Pillow shams.....	5 00	Racing purse, saddle horses, one half	
Crazy sofa pillow.....	5 00	mile.....	\$40 00
Crochet cap.....	2 50	Racing purse, saddle horses, one half	
Best display of fancy work.....	10 00	mile.....	10 00
Silk embroidery.....	5 00	Racing purse, one mile dash.....	100 00
Best display of paintings.....	3 00	Racing purse, one half mile dash.....	50 00
Oil painting.....	5 00	Racing purse, double team, one mile.....	75 00
Crayon drawings.....	2 50	Racing purse, one half mile dash.....	100 00
Gypsum.....	2 50	Racing purse, one half mile and repeat.....	150 00
Cabinet of minerals.....	15 00	Racing purse, one mile running.....	100 00
Silver, lead, and gold ores.....	15 00	Racing purse, one mile to harness.....	100 00
Cakes.....	2 00	Racing purse, Indian ponies.....	25 00
Two loaves of bread.....	2 00	Racing purse, stallions, one mile heats.....	100 00
Two loaves of corn bread.....	2 00	Ladies' tournament.....	100 00
Raised biscuit.....	2 00	Baseball.....	50 00
Two loaves of wheat bread.....	2 00		

TRANSACTIONS

OF THE

NINETEENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the County of Santa Barbara.

OFFICERS OF THE ASSOCIATION.

CHAS. P. LOW	President.
HENRY B. BRASTOW	Secretary.
A. L. LINCOLN	Treasurer.

DIRECTORS.

G. C. PACKARD	Santa Barbara.
T. C. NANCE	Santa Maria.
CHAS. P. LOW	Santa Barbara.
F. M. SENTENNEY	Carpenteria.
R. MATCHIN	Lompoc.
J. C. HAMER	Santa Barbara.
E. C. ROEDER	Santa Barbara.
W. B. JAMES	Santa Barbara.

REPORT.

SANTA BARBARA, December 31, 1887.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Nineteenth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

HENRY B. BRASTOW, Secretary.

RECEIPTS AND EXPENDITURES.

1887.		<i>Receipts.</i>	
October 3—	To received for advertisements, premium list pamphlet	\$215 00	
	To received from donation by C. W. Gorham	50 00	
	To received from race entries	680 00	
	To received from gate money and grand stand	1,954 50	
	To received from privileges	52 75	
	To received from sale of State warrant for \$1,500	1,485 00	
			\$4,437 25
1887.		<i>Expenditures.</i>	
December 8—	By paid T. C. Nance	\$5 50	
	By paid C. P. Low	5 90	
	By paid G. C. Packard	5 50	
	By paid E. C. Roeder	5 90	
	By paid J. C. Hamer	5 90	
	By paid F. S. Malone, judge of races	80 00	
	By paid postage stamps	1 15	
	By paid Government license, sale of cigars	3 10	
	By paid Edwards & Boeseke, merchandise	3 32	
	By paid A. McDonald, labor	8 00	
	By paid Arthur Spring, labor	16 00	
	By paid C. D. Kenley, gatekeeper	14 00	
	By paid F. Packard, gatekeeper	19 00	
	By paid Steamship Company, freight	1 25	
	By paid W. J. Stafford, posting bills	3 00	
	By paid Wells, Fargo & Co.	95	
	By paid Wells, Fargo & Co.	1 00	
	By paid Wells, Fargo & Co.	1 85	
	By paid Wells, Fargo & Co.	8 40	
	By paid Wells, Fargo & Co.	1 40	
	By paid Wells, Fargo & Co.	85	
	By paid G. C. Packard, labor	7 70	
	By paid Mrs. M. F. Hamer, badges	2 50	
	By paid Independent Publishing Co., advertising	62 50	
	By paid J. C. Hassinger, stationery	5 10	
	By paid Ira Almy, carpenter work	55 00	
	By paid T. L. Candy, gatekeeper	21 00	
	By paid C. H. Kelton, carting	5 00	
	By paid P. N. Newell, brooms	2 75	
	By paid Santa Barbara Herald	15 00	
	By paid T. E. Feehan, entry clerk	40 00	
	By paid to American Laundry	2 65	
	By paid Tom Martin, gatekeeper	16 00	
	By paid County Clerk, copy articles of incorporation	1 75	
	By paid A. Garland, cloth	16 85	

December 8—	By paid James Delaney, preparing ground, carting, etc.	\$107 00
	By paid Illustrated Publishing Co., advertising...	50 00
	By paid C. C. Kelton, night watchman	21 00
	By paid telegrams.....	65
	By paid Independent Publishing Co., 2,000 copies premium lists	116 00
	By paid F. A. Conant, engraving on medals	11 25
	By paid E. Cook, entry books, tickets, etc.	23 15
	By paid E. Gillett, carting	8 00
	By paid race purses	1,324 00
	By paid prizes ladies' tournament.....	40 00
	By paid prizes bicycle tournament	40 00
	By paid cash premiums	449 50
	By paid music, day and evening	300 00
	By paid F. M. Sentenney, services	30 50
	By paid W. B. James, services	5 50
	By paid C. P. Low, services	25 00
	By paid G. H. Walker, carting	6 00
December 31—	By paid J. M. Holloway, use of chairs	4 50
	By paid Press Publishing Co., advertising.....	37 35
	By paid J. E. Patterson, straw	28 00
	By paid G. C. Packard, services	45 00
	By paid C. N. Leet	6 55
	By paid B. F. Thomas, services	20 00
	By paid F. Rosenberg, nightwatch, yard	15 00
	By paid E. C. Roeder, services	25 00
	By paid E. C. Roeder, cost of fountain and decorations	112 94
	By paid Roeder & Ott, silverware for premiums..	240 95
	By paid R. Matchin, services	30 50
	By paid T. C. Nance, services	25 00
	By paid H. B. Brastow, Secretary	100 00
	By paid Improvement Company, use of grounds ..	150 00
	By paid Wells, Fargo & Co.	6 70
	By paid E. B. Chambers, silver cups and medals ..	553 00
	By paid Austin & Trenwith, cloth.....	3 54
	By paid Electric Light Company	27 00
	By paid C. D. Crowell, carting	5 00
		<hr/>
		\$4,439 30

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGHBRED HORSES.		
Stallion, Lightfoot	Ephraim Allen	Lompoc.
Stallion, Accident	G. W. Leland	Santa Barbara.
Mare, Maggie Bains	J. M. Hunter	Santa Barbara.
Mare, Lucy S.	J. M. Hunter	Santa Barbara.
CLASS II—ROADSTERS.		
Stallion, San Marco	Thomas R. More	Santa Barbara.
Mare, Florence	H. W. Lawrence	Santa Barbara.
Stallion, Tim	A. W. Buell	Santa Barbara.
Stallion, George W.	A. C. J. Willson	Santa Barbara.
Stallion, Saint Patrick	A. W. Buell	Santa Barbara.
Mare, Lucy	A. W. Buell	Santa Barbara.
Mare, Polly	A. W. Buell	Santa Barbara.
Colt, Dora	A. W. Buell	Santa Barbara.
Stallion, Cashmir	J. N. Johnson	Santa Barbara.
Stallion, Volante	E. C. Durfee	Santa Barbara.
Stallion, Logan	Ephraim Allen	Lompoc.
Stallion, Boston Boy	John Bradley	Santa Barbara.
Mare, ———	John Bradley	Santa Barbara.
Mare, Flora	George Buck	Goleta.
Stallion, Selim	E. A. Hollister	Goleta.
Stallion, Dashwood	E. A. Hollister	Goleta.
Mare, Maggie	W. E. Johnson	Santa Barbara.
Mare, ———	James A. Blood	Carpenteria.
Stallion, Fox	Andrew Martin	Carpenteria.
Mare, Mollie	S. T. Moore	Santa Barbara.
Stallion, Tony	S. T. Moore	Santa Barbara.
Stallion, Saxie	T. M. Lewis	Santa Barbara.
Stallion, Pete Doty	T. M. Lewis	Santa Barbara.
Stallion, Don Patricio	I. K. Fisher	Santa Barbara.
Mare, ———	G. C. Welsh	Santa Barbara.
Mare, ———	G. C. Welsh	Santa Barbara.
CLASS III—DRAFT HORSES.		
Horse colt, Chap	F. M. Sentenney	Carpenteria.
Two colts, Topsy and Pinto	F. M. Sentenney	Carpenteria.
Horse colt, Montibello	A. Doty	Carpenteria.
Horse colt, George	J. F. Fiske	Carpenteria.
Mare, Maggie	E. P. Sawyer	Carpenteria.
Colt, George	W. H. M. Cabel	Santa Barbara.
Stallion, Barney	M. Van Robbins	Goleta.
Mare and colt, Pussey	M. Van Robbins	Goleta.
Mare and colt, Beel	M. Van Robbins	Goleta.
Mare and colt, Beck	M. Van Robbins	Goleta.
Mare and colt, Tracy	M. Van Robbins	Goleta.
Mare and colt, Mellie E.	M. Van Robbins	Goleta.
Two fillies, Maggie and Belle	M. Van Robbins	Goleta.
Mare colt, Fanny	W. E. Johnson	Santa Barbara.
Mare colt, Kitty	W. E. Johnson	Santa Barbara.
Stallion, Aledo	T. Phillips	Goleta.
Stallion, El Kadir	T. Phillips	Goleta.
Stallion, Charlie	T. Phillips	Goleta.
Mare, Infelice	T. Phillips	Goleta.
Mare, Bertine	T. Phillips	Goleta.
Stallion, Cleveland	T. Phillips	Goleta.
Stallion, Chromo	T. Phillips	Goleta.
Filly, Flora	T. Phillips	Goleta.

FIRST DEPARTMENT--Continued.

Name of Animal.	Name of Owner.	P. O. Address.
Filly, Laura	T. Phillips	Goleta.
Filly, Lou	T. Phillips	Goleta.
Filly, Lucy	T. Phillips	Goleta.
Filly, Pony	T. Phillips	Goleta.
Horse colt, Stonewall	T. Phillips	Goleta.
Horse colt, Prince	T. Phillips	Goleta.
Mare, Puss	T. Phillips	Goleta.
Mare and colt, Belle	John F. More	Santa Barbara.
Mare and colt, Nellie	John F. More	Santa Barbara.
Mare and colt, Maud	John F. More	Santa Barbara.
Mare and colt, Luddie	John F. More	Santa Barbara.
Filly, Sukie	M. Van Robbins	Goleta.
Stallion, Chief	Con. Murphy	Santa Ynez.

CLASS IV--CARRIAGE HORSES.

Horse, Topsy	A. W. Buell	Santa Barbara.
Horse, Diamond	H. G. Pierce	Santa Barbara.
Horse, Bob Burns	H. G. Pierce	Santa Barbara.
Horse, Lapa	Z. P. Rucker	Lompoc.
Horse, Duke	W. E. Johnson	Santa Barbara.
Horse, John	E. C. Durfee	Santa Barbara.

CLASS V--HORSES FOR ALL PURPOSES.

Mare, Mollie	Wm. Richardson	Santa Barbara.
Horse colt, Tom	Wm. Richardson	Santa Barbara.
Filly, Julia	A. W. Buell	Santa Barbara.
Mare, Bet	A. Doty	Carpenteria.
Mare, Mollie	A. Doty	Carpenteria.
Mare, Flora	A. Doty	Carpenteria.
Horse, Chub	H. C. Richardson	Carpenteria.
Mare, Susie	H. C. Richardson	Carpenteria.
Filly, Topsy	E. P. Sawyer	Carpenteria.
Mare, Kate	G. S. W. Gaylord	La Mesa.
Horse colt, Ned	G. S. W. Gaylord	La Mesa.
Horse, Richmond	S. Hobbs	Santa Maria.
Horse, Compromise	S. Hobbs	Santa Maria.
Horse, Saxton	F. T. Underhill	Santa Barbara.
Horse, Dunois	F. T. Underhill	Santa Barbara.
Horse, Ben Wade	C. V. Currier	Santa Maria.
Horse, Louis	Geo. Buck	Goleta.
Horse, Newey	W. E. Johnson	Santa Barbara.
Mare, Kate	A. H. Phillips	Goleta.
Filly, Dolly	A. H. Phillips	Goleta.
Horse, Jeff	A. H. Phillips	Goleta.
Horse, Ben Archer	J. Archer	Santa Barbara.
Horse, Barney	A. M. Foulks	Santa Barbara.
Mare and colt, Doll and Jennie	A. M. Foulks	Santa Barbara.
Mare and colt, Pet and Belle	J. Archer	Santa Barbara.
Two colts, Bruce and Selim	A. M. Foulks	Santa Barbara.
Filly, Queen	T. M. Lewis	Santa Barbara.
Filly, Princess	T. M. Lewis	Santa Barbara.

CLASS VI--SADDLE HORSES.

Horse	E. C. Durfee	Santa Barbara.
Horse	T. M. Lewis	Santa Barbara.
Horse	A. Romero	Santa Barbara.
Horse	Wm. Smith	Santa Barbara.
Horse	C. D. Patterson	Los Alamos.

CLASS VII--MULES.

Pair mules, Pete and Joe	M. Van Robbins	Santa Barbara.
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CLASS VIII--JACKS.

Jack, Jock	F. T. Underhill	Santa Barbara.
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CLASS I--CATTLE--THOROUGHBRED DURHAMS.

Cow, Pet	Wm. Swift	Santa Barbara.
Cow, Lilly	Wm. Swift	Santa Barbara.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS II—THOROUGHbred JERSEYS.		
Bull calf, Cæsar's Billy	E. J. Packard	Santa Barbara.
Heifer, Alossa Stoke Pogis	E. J. Packard	Santa Barbara.
Bull, Cæsar	E. J. Packard	Santa Barbara.
Cow, Fanny	E. J. Packard	Santa Barbara.
Cow, Rose Sages	E. J. Packard	Santa Barbara.
Calf, Farmer's Dott	E. J. Packard	Santa Barbara.
CLASS III—GRADED JERSEYS.		
Cow, Christmas	J. H. Hunter	Santa Barbara.
Cow, Daisy	W. J. Stafford	Santa Barbara.
CLASS VI—GRADED.		
Cow, Judy	Wm. Robinson	Santa Barbara.
Cow, Queen	E. Strathern	Santa Barbara.
Heifer, Blacky	W. N. Leet	Santa Barbara.
Cow, Betsy	W. J. Stafford	Santa Barbara.
Cow, Belle	W. J. Stafford	Santa Barbara.
CLASS VII—HERD OF CATTLE.		
Bull, Cæsar, and five Jersey cows	E. J. Packard	Santa Barbara.
CLASS IX—SWINE.		
Boar, Dick	L. G. Oliver	Santa Barbara.
Sow, Bess, and pigs	L. G. Oliver	Santa Barbara.
Boar, Ben Butler	A. H. Phillips	Goleta.
Sow, Lady Mayhew	A. H. Phillips	Goleta.
Litter of pigs	A. H. Phillips	Goleta.
Sow, Sally, and pigs	Josiah Faulding	Santa Barbara.
Sow, Lucy Long, and pigs	Josiah Faulding	Santa Barbara.
Sow, Queen	Josiah Faulding	Santa Barbara.
Sow, Betsy, and pigs	Josiah Faulding	Santa Barbara.
Boar, Jim Blaine	Josiah Faulding	Santa Barbara.
Boar, Buffalo Bill	Josiah Faulding	Santa Barbara.
Sow and pigs	James Delaney	Santa Barbara.
POULTRY, ETC.		
Pigeons	H. F. R. Vail	Santa Barbara.
Guinea pigs	H. F. R. Vail	Santa Barbara.
Ducks	H. F. R. Vail	Santa Barbara.
Guinea pigs	Fred. Blood	Santa Barbara.
Guinea pigs	Bertie Hunt	Santa Barbara.
Canaries	Mrs. M. A. Spring	Santa Barbara.
Chickens	E. J. Packard	Santa Barbara.
Ducks	C. M. Spring	Santa Barbara.
Canaries	C. N. Leet	Santa Barbara.
Ducks	James Delaney	Santa Barbara.
Chickens	Wm. Swift	Santa Barbara.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Stallion, Accident	G. W. Leland	Santa Barbara	\$10 00
Stallion, Lightfoot	Ephraim Allen	Lompoc	\$5 00
Mare, Maggie Barnes	J. M. Hunter	Santa Barbara	\$10 00
Mare, Lucy S.	J. M. Hunter	Santa Barbara	\$3 00
CLASS II.			
Mare, Florence	H. W. Lawrence	Santa Barbara	\$10 00
Stallion, George W.	A. C. J. Wilson	Santa Barbara	\$8 00
Stallion, St. Patrick	A. W. Buell	Santa Barbara	\$3 00
Mare, Lucy	A. W. Buell	Santa Barbara	\$10 00
Mare, Polly	A. W. Buell	Santa Barbara	\$6 00
Stallion, Volante	E. C. Durfee	Santa Barbara	\$15 00
Stallion, Selim	E. A. Hollister	Goleta	\$5 00
Stallion, Dashaway	E. A. Hollister	Goleta	\$3 00
Mare, Maggie	W. E. Johnson	Santa Barbara	\$6 00
Colt	Andrew Martin	Carpenteria	\$4 00
Colt	S. T. Moore	Santa Barbara	\$2 00
Colt	T. M. Lewis	Santa Barbara	\$2 00
Stallion, Don Patricio	I. K. Fisher	Santa Barbara	\$6 00
CLASS III.			
Yearling, S. Montibello	A. Doty	Carpenteria	\$5 00
Stallion, El Kadir	T. Phillips	Goleta	\$15 00
Stallion, Charley	T. Phillips	Goleta	\$5 00
Mare, Bertine	T. Phillips	Goleta	\$10 00
Stallion, Cleveland	T. Phillips	Goleta	\$6 00
Stallion, Chromo	T. Phillips	Goleta	\$2 00
Filly, Flora	T. Phillips	Goleta	\$3 00
Filly, Laura	T. Phillips	Goleta	\$6 00
Colt, Prince	T. Phillips	Goleta	\$2 00
Colt, Puss	T. Phillips	Goleta	\$2 00
Mare, Belle	J. F. More	Goleta	\$5 00
Filly, Sukey	M. Van Robbins	Goleta	\$2 00
Stallion, Chief	Con. Murphy	Santa Cruz	\$8 00
Stallion, El Kadir and five colts	T. Phillips	Goleta	\$15 00
CLASS IV—CARRIAGE HORSES.			
Mare, Topsy	A. W. Buell	Santa Barbara	\$5 00
Double team, Diamond and Bob Burns	H. G. Pierce	Santa Barbara	\$10 00
CLASS V—HORSES FOR ALL PURPOSES.			
Mare, Mollie	Wm. Robinson	Santa Barbara	\$5 00
Mare, Millie	A. Doty	Carpenteria	\$10 00
Colt, Topsy	E. P. Sawyer	Carpenteria	\$2 00
Horse, Richmond	S. Hobbs	Santa Maria	\$8 00
Horse, Compromise	S. Hobbs	Santa Maria	\$15 00
Colt, Dunois	F. T. Underhill	Santa Barbara	\$2 00
Mare, Kate	A. H. Phillips	Goleta	\$10 00
Stallion, Ben Archer and five colts	J. Archer	Santa Barbara	\$15 00
Filly	T. M. Lewis	Goleta	\$6 00
Filly	T. M. Lewis	Goleta	\$3 00
CLASS VI—SADDLE HORSES.			
Horse, Chief	C. D. Patterson	Los Alamos	\$8 00
Horse, Bob	Wm. Smith	Santa Barbara	\$4 00
CLASS VII—MULES.			
Span of mules, Pete and Joe	M. Van Robbins	Goleta	\$8 00

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS VIII—JACKS AND JENNIES.			
Jack, Jock	F. T. Underhill	Santa Barbara	\$6 00
CLASS I—DURHAM CATTLE.			
Cow, Lilly	Wm. Swift	Santa Barbara	\$6 00
Cow, Pet	Wm. Swift	Santa Barbara	\$3 00
CLASS II—THOROUGHBERED JERSEYS.			
Bull calf, Cæsar's Billy	E. J. Packard	Santa Barbara	\$8 00
Heifer, Alossa Stoke Poges	E. J. Packard	Santa Barbara	\$4 00
Bull, Cæsar	E. J. Packard	Santa Barbara	\$8 00
Herd of Jerseys	E. J. Packard	Santa Barbara	\$10 00
CLASS III—GRADED JERSEYS.			
Heifer, Christmas	J. M. Hunter	Santa Barbara	\$4 00
CLASS VI—GRADED.			
Cow, Judy	Wm. Robinson	Santa Barbara	\$5 00
Cow, Queen	E. Strathern	Santa Barbara	\$3 00
Heifer, Blackey	W. N. Leet	Santa Barbara	\$2 00
Cow, Belle	W. J. Stafford	Santa Barbara	\$5 00
Calf	W. J. Stafford	Santa Barbara	\$2 00
CLASS IX—SWINE.			
Boar, Jack	L. G. Oliver	Santa Barbara	\$2 50
Sow	L. G. Oliver	Santa Barbara	\$3 00
Boar, Ben Butler	A. H. Phillips	Goleta	\$5 00
Sow, Lady Mayhew	A. H. Phillips	Goleta	\$5 00
Litter of pigs	J. Faulding	Santa Barbara	\$2 00
Sow and pigs (\$5 and \$2)	J. Faulding	Santa Barbara	\$7 00
Boar, Jim Blaine	J. Faulding	Santa Barbara	\$3 00
POULTRY, ETC.			
Pigeons	H. F. R. Vail	Santa Barbara	\$2 00
Pigeons	H. F. R. Vail	Santa Barbara	\$5 00
Guinea pigs	Bertie Hunt	Santa Barbara	\$2 00
Canaries	Mrs. M. A. Spring	Santa Barbara	\$2 00
Chickens	E. J. Packard	Santa Barbara	\$2 00
Chickens	E. J. Packard	Santa Barbara	\$2 00
Ducks	Jas. Delaney	Santa Barbara	\$2 00
Chickens	Wm. Swift	Santa Barbara	\$2 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I—FARM PRODUCTS			
Rye	E. A. Hollister	Goleta	\$2 00
Yellow corn	Andrew Martin	Carpenteria	\$2 00
Corn in stalk	T. C. Callis	Carpenteria	\$2 00
English mustard	Geo. Bessinger	Lompoc	\$2 00
Squash	H. Langman	Goleta	\$2 00
Largest watermelon	Geo. M. Williams	Santa Barbara	\$1 00
Best watermelon	Geo. M. Williams	Santa Barbara	\$1 00
Onions	Jno. Spence	Santa Barbara	\$2 00
Carrots	H. Langman	Goleta	\$2 00
Tomatoes	Geo. M. Williams	Santa Barbara	\$2 00
Lima beans	T. C. Callis	Carpenteria	\$2 00
Tobacco	Mrs. Koeppen	Santa Barbara	\$2 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS II—MISCELLANEOUS PRODUCTS.			
Packed butter.....	L. G. Oliver.....	Santa Barbara.....	Butter dish.
Roll butter.....	E. P. Sawyer.....	Carpenteria.....	Butter dish.
Cake.....	Mrs. L. G. Oliver.....	Santa Barbara.....	H'f doz. forks.
Home-made bread.....	Mrs. M. M. Lewis.....	Goleta.....	H'f dz. spoons.
Honey in the comb.....	J. Archer.....	Santa Barbara.....	.....\$2 00
Honey extracted.....	J. Archer.....	Santa Barbara.....	.....\$2 00
Pampas plumes.....	Mrs. J. B. Wentling.....	Santa Barbara.....	.....\$2 00
LADIES' DEPARTMENT.			
Best exhibit needlework.....	Miss J. Fanning.....	Santa Barbara.....	..... Medal.
Patchwork quilt.....	Mrs. Z. T. Rucker.....	Santa Barbara.....	Berryspoon.
Crazy quilt.....	Miss Austin.....	Santa Barbara.....	..... Toilet set.
Embroidery.....	Miss A. Prince.....	Santa Barbara.....	Jewel casket.
Crochet work.....	Miss Jennings.....	Santa Barbara.....	Card receiv'r.
Tatting.....	Mrs. Williams.....	Santa Barbara.....	Napkin ring.
Artificial flowers.....	Miss C. Prince.....	Santa Barbara.....	Flowerstand.
Applique work.....	Miss J. Fanning.....	Santa Barbara.....	..... Vase.
Palmleaf hat.....	Mrs. J. DeArzaga.....	Carpenteria.....	Napkin ring.
Shell work.....	Mrs. Covarrubias.....	Santa Barbara.....	..... Toilet set.
Moss work.....	H. E. S. McCarthy.....	Santa Barbara.....	..... Toilet set.
Hair work.....	Miss C. Prince.....	Santa Barbara.....	..... Inkstand.
Knitting work.....	Miss F. Hall.....	Santa Barbara.....	Match hold'r.
Thread lace.....	Miss J. Fanning.....	Santa Barbara.....	Jewel casket.
Japanese work.....	Miss Ruiz.....	Santa Barbara.....	One doz. tea-spoons.
Drawn work.....	Mrs. Covarrubias.....	Santa Barbara.....	..... Medal.
FINE ARTS.			
Oil painting.....	A. Harmer.....	Santa Barbara.....	..... Medal.
Oil painting.....	Miss Gover.....	Santa Barbara.....	..... Medal.
Oil portrait.....	George Hall.....	Santa Barbara.....	..... Medal.
Water colors landscape.....	H. C. Ford.....	Santa Barbara.....	..... Medal.
Etchings.....	H. C. Ford.....	Santa Barbara.....	..... Medal.
Crayon.....	Mr. Nicolini.....	Santa Barbara.....	..... Medal.
Photographs.....	W. J. Rea.....	Santa Barbara.....	..... Medal.
Water colors flowers.....	Miss J. Dayton.....	Santa Barbara.....	..... Medal.
Crayon landscape.....	Miss Dugan.....	Santa Barbara.....	..... Medal.
India ink portrait.....	Miss Ruiz.....	Santa Barbara.....	..... Medal.
Sign painting.....	Judd & Ehat.....	Santa Barbara.....	..... Medal.
MANUFACTURES OF THIS COUNTY.			
Farm wagon.....	W. N. & T. S. Hawley.....	Santa Barbara.....	..... Medal.
Pair calf boots.....	Bell & Hunt.....	Santa Barbara.....	..... Medal.
Furniture.....	I. Faundry.....	Santa Barbara.....	..... Medal.
Candies.....	J. C. Martin.....	Santa Barbara.....	..... Medal.
Saddle.....	S. Loomis.....	Santa Barbara.....	..... Medal.
Carriage harness.....	S. Loomis.....	Santa Barbara.....	..... Medal.
Draft harness.....	S. Loomis.....	Santa Barbara.....	..... Medal.
Stamped leather.....	S. Loomis.....	Santa Barbara.....	..... Medal.
Cigars.....	Mrs. Koeppen.....	Santa Barbara.....	..... Medal.
Marble work.....	S. T. Moore.....	Santa Barbara.....	..... Medal.
Side saddle.....	J. J. Eddleman.....	Santa Barbara.....	..... Medal.
BABIES.			
Twin.....	Edgar Stafford.....	Santa Barbara.....	Silver cap.
Twin.....	Albert Stafford.....	Santa Barbara.....	Silver cup.
Prettiest baby over six months.....	Albert Stafford.....	Santa Barbara.....	Ster. sil. cup.
Second prettiest baby over six mos.....	Elbert Coleman.....	Santa Barbara.....	Silver cup.
Prettiest baby under six months.....	Josephine Doty.....	Goleta.....	Ster. sil. cup.
Second prettiest baby under six mos.....	Francis Buck.....	Santa Barbara.....	Silver cup.
Biggest baby under twelve months.....	Louis Doer.....	Santa Barbara.....	Silver cup.
Biggest baby under twelve months.....	Belden Sawyer.....	Santa Barbara.....	Silver p. cup.
Biggest baby under twelve months.....	Dexter Wood.....	Santa Barbara.....	Silver p. cup.
Biggest baby under twelve months.....	Edgar Stafford.....	Santa Barbara.....	Silver p. cup.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
MERCHANDISE.			
Clothing	Rouse & Frink	Santa Barbara	Medal.
Chinese goods	Chung Wang	Santa Barbara	Medal.
Groceries	Jordan & Lincon	Santa Barbara	Medal.
Crockery and glassware	Jordan & Lincon	Santa Barbara	Medal.
Boots and shoes	Emerson & Co.	Santa Barbara	Medal.
Hardware	Edwards & Boeseke	Santa Barbara	Medal.
Guns and sporting materials	Edwards & Boeseke	Santa Barbara	Medal.
Drugs and medicines	A. M. Ruiz	Santa Barbara	Medal.
Agricultural implements	W.A. & T.S.Hawley	Santa Barbara	Medal.
Farming machinery	W.A. & T.S.Hawley	Santa Barbara	Medal.
FRUITS.			
Best display by one person	Geo. M. Williams	Santa Barbara	Prize tea set.
Apples	Wm. Jackson	Lompoc	Pickle dish.
Pears	Wm. Jackson	Lompoc	Spoon holder.
Peaches	Wm. Jackson	Lompoc	Syrup cup.
Grapes	Geo. M. Williams	Santa Barbara	Fruit stand.
Strawberries	J. E. Shepherd	Carpenteria	Sugar tongs.
Blackberries	C. N. Leet	Carpenteria	Pres've shell.
Oranges	J. E. Shepherd	Carpenteria	Butter dish.
Lemons	G. C. Parkard	Santa Barbara	Medal.
Assorted jellies	Mrs. Spring	Carpenteria	Pickle dish.
Jellies from apples, pears, and prunes	Mrs. L. G. Oliver	Santa Barbara	Spoon holder.
Domestic canned fruit	Mrs. G. C. Packard	Santa Barbara	Butter dish.
Sweet pickles	Mrs. L. G. Oliver	Santa Barbara	Pickle dish.
Pickled olives	Mrs. M. A. Spring	Carpenteria	Spoon holder.
Jellies from grapes and berries	Mrs. Sutton	Carpenteria	Medal.
Dried fruits and nuts	E. J. Knapp	Carpenteria	Medal.
Jellies	Mrs. W. B. Squires	Santa Barbara	Medal.
Grapes	Cyrus Kinney	Santa Barbara	Medal.
PLANTS AND FLOWERS.			
Best general display of flowers	John Spence	Santa Barbara	Fruit stand.
Palms in boxes	John Spence	Santa Barbara	Waiter.
Named roses	John Spence	Santa Barbara	Medal.
Ferns in pots	John Spence	Santa Barbara	Vase.
Basket of flowers	Mrs. John Spence	Santa Barbara	Flower stand.
Cut flowers	Mrs. John Spence	Santa Barbara	Special men.
Hand bouquet	Mrs. John Spence	Santa Barbara	Special men.
Parlor bouquet	Mrs. John Spence	Santa Barbara	Special men.
FINAL CLASS.			
Horizontal engine	L. D. Gates	Santa Barbara	Medal.
Surrey carriage	Hunt, Son & Schuster	Santa Barbara	Medal.
Sunflowers	C. N. Leet	Santa Barbara	\$2 00
Carriages	W.A. & T.S.Hawley	Santa Barbara	Medal.
Cologne, florida water, and bay rum	A. M. Ruiz	Santa Barbara	Cake basket.
Parrot	Mrs. E. T. Gornley	Santa Barbara	\$2 00
Mosswork	Madam Brosse	Santa Barbara	Medal.
Bears	I. Fullington	Santa Barbara	Medal.
Spinning wheel	James Martin	Carpenteria	Special men.

SPEED PROGRAMME.

WEDNESDAY, SEPTEMBER 28, 1887.

RACE NO. 1—RUNNING.

Purse, one hundred dollars. First horse, sixty per cent; second, forty per cent. Entry fee, ten per cent. For horses owned in Santa Barbara County thirty days previous to September 27, 1887. One quarter mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Nellie B, s. m.	G. C. Welsh	Santa Barbara.
Gen. Logan, b. s.	L. F. Ruiz	Santa Barbara.
Sid Lowe, b. g., by Sultan; dam, Peri.	E. R. Den	Santa Barbara.
Cashmir, b. g.	J. N. Johnson	Santa Barbara.

<i>Position at Starting.</i>	<i>Position at Close.</i>			
1. Sid Lowe	Sid Lowe	1	3	1
2. Nellie B	Gen. Logan	2	1	2
3. Gen. Logan	Cashmir	3	2	3
4. Cashmir	Nellie B	4	4	4

Time—0:24½; 0:24; 0:24.

RACE NO. 2—BICYCLE TOURNAMENT AND RACE.

Premiums awarded, amounting to forty dollars.

RACE NO. 3—TROTTING.

Purse, one hundred and fifty dollars. First horse, sixty per cent; second, forty per cent. Entry fee, ten per cent. For horses owned in Santa Barbara County thirty days previous to September 27, 1887. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Old Ned, g. g., unknown	J. N. Johnson	Santa Barbara.
Nigger Baby, br. g., by Parnell	Arza Porter	Santa Barbara.
Anselmo H, g. s., by Richmond	E. S. Cordero	Santa Barbara.
Birdie, s. m., by Dashaway	O. Hunt	Santa Barbara.

<i>Position at Starting.</i>	<i>Position at Close.</i>			
1. Birdie	Nigger Baby	1	1	1
2. Old Ned	Birdie	2	2	3
3. Nigger Baby	Old Ned	3	3	4
4. Anselmo H	Anselmo H	4	4	2

Time—3:00; 2:58; 2:54.

THURSDAY, SEPTEMBER 29, 1887.

RACE NO. 4—RUNNING.

Purse, one hundred and fifty dollars. First horse, sixty per cent; second, forty per cent. Entry fee, ten per cent. For horses owned in Santa Barbara County thirty days previous to September 27, 1887. Accident and Lightfoot barred. One half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Collier, s. g., by Nordale	J. Clifford	Santa Barbara.
Fandango, s. g., by Ironwood	E. R. Den	Santa Barbara.
Hardwood, b. g.	O. A. Kenyon	Santa Barbara.
Black Bessie, bk. m., by Newsy	W. Shepherd	Carpenteria.
Comanche, b. s.	Jesse Hill	Lompoc.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Comanche	Fred Collier
2. Black Bessie	Fandango
3. Fandango	Comanche
4. Fred Collier	Black Bessie
5. Hardwood (withdrawn)	

Time—0:52; 0:52.

No. 5—LADIES EQUESTRIAN TOURNAMENT.

Five ladies present for competition. Prizes awarded: Mrs. Hawcroft, fifteen dollars; Mrs. Swain, ten dollars; Mrs. French, five dollars; Mrs. Bound, five dollars; Mrs. Stewart, five dollars.

RACE NO. 6—TROTTING.

Special for stallions. Purse, one hundred and fifty dollars. First horse, sixty per cent; second, forty per cent. Entry fee, ten per cent. For stallions owned in Santa Barbara County. Open to Tom Rice, Ventura County. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rosewall, g. s., by Richmond; dam, by Creighton	C. A. Storke	Santa Barbara.
Dan Rice, br. s., by Gen. McClellan; dam, by Hambletonian	J. G. Doty	Santa Barbara.
Tom Rice, b. s., by Bob Mason; dam, Eva P.	F. Paulin	Springville.
Bashaw, b. s., by Mopsy; dam, by Owen Dale ..	R. Bennet	Lompoc.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Dan Rice	Tom Rice
2. Rosewall	Dan Rice
3. Tom Rice	Rosewall
4. Bashaw (withdrawn)	

Time—2:44; 2:44; 2:42½.

FRIDAY, SEPTEMBER 30, 1887.

RACE NO. 7—RUNNING.

Purse, two hundred dollars. First horse, sixty per cent; second, forty per cent. Entry fee, ten per cent. Free for all. Three-quarter mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Accident, b. s., by Grinstead; dam, Nina R.	G. M. Leland.	Santa Barbara.
Consuello, b. s., by Musey.	E. R. Den.	Santa Barbara.
Comanche, b. s.	Jesse Hill.	Lompoc.

Position at Starting.

1. Consuello.
2. Accident.
- Comanche.

Position at Close.

- | | | |
|-----------------|---|---|
| Accident. | 1 | 1 |
| Consuello. | 2 | 2 |
| Comanche. | 3 | 3 |

Time—1:18; 1:20.

RACE NO. 8—WALKING.

Purse, fifty dollars. First team, sixty per cent; second, forty per cent. Entry fee, ten per cent. For double teams owned in Santa Barbara County. One mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Joe, g. g.; Ned, s. g.	Clarence Kelton.	Santa Barbara.
Charlie, s. g.; Dick, b. s.	John Sullivan.	Santa Barbara.
Millie, b. m.; Bet, b. m.	A. Doty.	Carpenteria.
Dolly, b. m.; Champ, b. g.	A. Sutton.	Carpenteria.

Position at Starting.

1. Charlie and Dick.
2. Dolly and Champ.
3. Millie and Bet.
4. Joe and Ned.

Position at Close.

- | | | |
|------------------------|---|---|
| Millie and Bet. | 1 | 1 |
| Joe and Ned. | 2 | 2 |
| Dolly and Champ. | 3 | 3 |
| Charlie and Dick. | 4 | 4 |

Time—13:15; 13:30.

RACE NO. 9—TROTTING.

For horses owned in Santa Barbara County thirty days previous to September 27, 1887. Purse, two hundred dollars. Open to Tom Rice, Ventura County. Entrance fee, ten per cent. Sixty per cent to first horse; forty per cent to second. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rosewall, g. s., by Richmond; dam, by Creighton.	Jas. Delaney.	Santa Barbara.
Dan Rice, br. s., by Gen'l McClellan; dam, Hambletonian.	J. G. Doty.	Santa Barbara.
Tom Rice, b. s., by Bob Mason; dam, Eva P.	P. J. Doyle.	Santa Barbara.
Norwood, b. g., by Norwood; dam, by Patchen.	G. W. French.	Santa Barbara.
Topsy, blk. m., by Brigadier; dam, Nelly.	G. C. Smith.	Santa Maria.

Position at Starting.

1. Dan Rice.
2. Topsy.
3. Norwood.
4. Rosewall.
5. Tom Rice (drawn).

Position at Close.

- | | | | |
|----------------|------|---|---|
| Norwood. | 1 | 1 | 1 |
| Rosewall. | 2 | 2 | 2 |
| Topsy. | dis. | | |
| Dan Rice. | dis. | | |

Time—2:37; 2:37; 2:37.

SATURDAY, OCTOBER 1, 1887.

RACE No. 10—RUNNING.

For Agricultural Association Cup; value, two hundred dollars. Open to horses owned in Santa Barbara County. Entrance fee, twenty dollars each. First horse to take the cup only; second, sixty per cent; third, forty per cent. Mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Accident, b. s.	G. W. Leland	Santa Barbara.
Consuello, b. s., by Grinstead; dam, Nina R.	E. R. Den	Santa Barbara.
Comanche, b. s., by Mury	Jessie Hill	Lompoc.
Fred Collier, s. g.	J. Clifford	Santa Barbara.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Comanche	Consuello
2. Accident	Accident
3. Consuello	Comanche
4. Fred Collier (drawn)	Race declared off on account of fraud. Cup returned to the Agricultural Association. Rider of Accident, J. Clifford, ruled off the track by the judges of the race.

Time—1:47.

RACE No. 11—WALKING.

Purse, fifty dollars. For single horses, to harness, owned in Santa Barbara County. Entrance fee, ten per cent. Sixty per cent to first horse; forty per cent to second. One mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Joe, g. g.	C. Kelton	Santa Barbara.
Ben Archer, b. s.	J. Archer	Santa Barbara.
Bet, b. m.	A. Doty	Carpenteria.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Joe	Joe
2. Ben Archer	Bet
3. Bet	Ben Archer

Time—9:40; 10:00.

RACE No. 12—TROTTING.

Purse, five hundred dollars. Free for all. Entrance fee, ten per cent. Sixty per cent to first horse; thirty per cent to second; ten per cent to third. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Harry Velox, b. g., by Velox	Dick Barnes	Butte, Montana.
Hunter, br. g., by Jersey Lad; dam, Hambletonian	J. Comfort	Santa Barbara.
Topsy, blk. m., by Brigadier; dam, Nelly	G. C. Smith	Santa Maria.
Dan Rice, br. s., by Gen'l McClellan; dam, Hambletonian	J. G. Doty	Santa Barbara.
Bashaw, b. s., by Wopsy; dam, by Owen Dale	E. Allen	Lompoc.

RACE No. 12—TROTting—Continued. .

<i>Position at Starting.</i>		<i>Position at Close.</i>			
1. Hunter.....		Harry Velox.....	1	2	1 1
2. Harry Velox.....		Hunter.....	2	1	2 dr.
3. Bashaw (drawn).....		Last heat Harry Velox sent around for first money.			
4. Topsy (drawn).....					
5. Dan Rice (drawn).....					

Time—2:26; 2:30; 2:31; 2:31.

TRANSACTIONS

OF THE

TWENTY-FIFTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Solano and Napa.

OFFICERS OF THE ASSOCIATION.

F. W. LOEBER.....	President.
A. J. McPIKE.....	Secretary.
D. W. HARRIER.....	Treasurer.

DIRECTORS.

M. M. ESTEE.....	Napa.
NATHAN COOMBS.....	Napa.
JOHN EVAN.....	Napa.
F. W. LOEBER.....	St. Helena.
L. W. BUCK.....	Vacaville.
A. T. HATCH.....	Suisun.
JAMES CLYNE.....	Benicia.
E. E. LEAKE.....	Dixon.

REPORT.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Twenty-fifth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

A. T. McPIKE, Secretary.

RECEIPTS AND EXPENDITURES.

1887.		<i>Receipts.</i>	
October	4—From subscriptions.....	\$1,096	50
	Gate receipts at Park.....	212	65
	Door receipts at Pavilion.....	49	30
	McCullough & Renquin, privilege at Park.....	254	25
	Harrier & Son, privilege at Park.....	141	25
	C. J. Edgar, privilege at Park.....	26	00
	5—Gate at Park.....	82	75
	Door at Pavilion.....	92	00
	6—Gate at Park.....	65	50
	Door at Pavilion.....	86	10
	7—Gate at Park.....	87	35
	Door at Pavilion.....	112	85
	Baptist Church ladies, privilege at Pavilion.....	25	00
	8—Gate at Park.....	131	35
	Door at Pavilion.....	186	70
	A. J. Tioilegar, privilege at Pavilion.....	16	55
	A. J. Tioilegar, privilege at Park.....	10	00
	Bird privilege at Park.....	7	50
	John Wilson, nine certificates of membership.....	45	00
	D. W. Harrier, eight certificates of membership.....	40	00
	F. W. Loeber, twenty-three certificates of membership.....	115	00
	W. S. Babcock, three certificates of membership.....	15	00
	W. S. Babcock, one lady's certificate of membership.....	2	00
	L. W. Buck, four certificates of membership.....	20	00
	Thomas Robinson, ten certificates of membership.....	50	00
	A. J. McPike, thirty certificates of membership.....	150	00
	10—James Pennycook, three certificates of membership.....	15	00
	Alexander Scott, thirteen certificates of membership.....	65	00
	Door at Pavilion.....	48	25
	Entries for purses.....	610	00
	Messrs. Jno. Wilson and D. W. Harrier.....	1,250	00
	B. C. Holly, donation.....	17	50
		\$5,126	35
	<i>Recapitulation.</i>		
	Subscription.....	\$1,096	50
	Gate at Park.....	579	60
	Door at Pavilion.....	575	20
	Privileges.....	480	55
	Certificates of membership.....	517	00
	Entries for purses.....	610	00
	John Wilson and D. W. Harrier.....	1,250	00
	B. C. Holly, donation.....	17	50
		\$5,126	35

Expenditures.

1887.		
October 12—	William Walker, for lumber	\$29 59
	George Phillips, for straw	14 40
	George E. Hanscome, telephone connections	16 50
	Pennycook & Harrier, printing and advertising	132 50
	J. R. English, music	100 00
	Aden & Currier, rent of Pavilion	100 00
	R. D. Watson, for hay	21 80
	W. A. McKinder, advertising	10 00
	L. L. Palmer, advertising	10 00
	C. E. Lober, gatekeeper at Park	15 00
	W. S. Babcock, entry clerk at Pavilion	30 00
	S. Corcoran, hauling straw	15 00
	S. Corcoran, man and team on track	25 00
	Henry McPike, attending grand stand	2 50
	A. J. McPike, Jr., ticket seller at Pavilion	9 00
	William Corrigan, marshal at Park	15 00
	George Roe, printing and advertising	20 00
	H. Bokias, watchman at Pavilion	17 50
	George Currier, superintendent, watchman, etc., at Pavilion	27 00
	Port Costa Lumber Co., lumber	73 75
	Vallejo Gas Co., gas	20 80
	F. Hunt, assistant entry clerk	2 50
	J. O. Johnson, hauling	10 00
	Mrs. Ira Austin, for hay	15 25
	P. McElroy, stationery	5 15
	Vacaville Reporter, advertising	5 00
	Napa Register, advertising	5 00
	Dixon Tribune, advertising	5 00
	James Rule, assistant marshal	2 50
	A. J. McPike, salary as Secretary	150 00
	National Trotting Association	50 00
	Expressage, stamps and telegraphing	10 00
	Thomas Robinson, entry clerk at Park	35 00
	H. Bokias, for labor at Pavilion	2 50
	Joseph Brophy, assistant watchman at Pavilion	2 50
	Breeder and Sportsman, advertising	19 50
	S. Dannenbaum, ribbon	35 10
	W. Walker, lumber	4 48
	John Brownlie, nails	3 15
	Benicia New Era, advertising	10 00
	Florence Blank, assistant entry clerk	3 00
	Maggie Tobin, assistant entry clerk	4 50
	William H. Tripp, filling out diplomas	25 00
	F. W. Loeber, expenses as President	100 00
	D. W. Harrier, interest, etc.	44 50
	Aden Bros., damage done to canvas	25 00
		<hr/>
		\$1,279 97
	B. C. Holly, purse	\$360 00
	John Goldsmith, purse	180 00
	H. Hitchcock, purse	60 00
	Thomas Smith, purse	120 00
	W. McGraw, purse	60 00
	D. R. Misner, purse	40 00
	C. W. Gardner, purse	180 00
	Thomas Smith, purse	90 00
	W. McGraw, purse	35 00
	H. V. Starr, purse	240 00
	Joseph Edge, purse	120 00
	C. W. Gardner, purse	40 00
	C. McSorley, purse	25 00
	Leo Shaner, purse	300 00
	H. Hitchcock, purse	150 00
	L. B. Lindsey, purse	50 00
	B. C. Holly, purse	300 00
	B. C. Holly, purse	250 00
		<hr/>
		\$2,600 00
	Premiums	1,243 00
		<hr/>
		\$5,122 97

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGHBREDED HORSES.		
Stallion, three years old, Ironclad	B. C. Holly	Vallejo.
Stallion, two years old, Hamlet	B. C. Holly	Vallejo.
Mare, four years old, Irish Lass	B. C. Holly	Vallejo.
Mare, three years old, Ninena	B. C. Holly	Vallejo.
Mare, two years old, Lillie	B. C. Holly	Vallejo.
Mare, one year old, Incomode	B. C. Holly	Vallejo.
CLASS II—HORSES OF ALL WORK.		
Stallion, four years old, Rigoletti	F. Brughelli	Napa.
Stallion, four years old, Baccacio	F. Brughelli	Napa.
Mare, four years old, Hattie P	Mrs. S. S. Drake	Vallejo.
Mare, four years old, Anages	J. W. Farmer	Vallejo.
CLASS III—GRADED HORSES.		
Stallion, four years old, Coligna	Cal. Reams	Suisun.
CLASS IV—DRAFT HORSES.		
Stallion, four years old, Frenchy	E. J. Upham	Rio Vista.
Stallion, four years old, Sampson	H. B. Deming	Vallejo.
Stallion, three years old, Gladstone	P. D. Walsh	Vallejo.
Mare, four years old, Nell	C. B. Deming	Vallejo.
Suckling colt, Blanche	E. J. Upham	Rio Vista.
Suckling colt, Paris	M. Hagen	Napa.
Suckling colt, Sambo	C. B. Deming	Vallejo.
CLASS V—ROADSTERS.		
Stallion, four years old, Woodnut	B. C. Holly	Vallejo.
Stallion, four years old, Membrino	Thos. Smith	Vallejo.
Stallion, four years old, Gus W	P. D. Walsh	Vallejo.
Mare, four years old, Flora Bell	Mrs. Skinner	Napa.
Mare, six years old, Nellie	A. J. McPike	Vallejo.
Mare, six years old, Katie Mc	John McMannus	Vallejo.
Mare, six years old, Romono	F. H. Sanderson	Vallejo.
Mare, six years old, Lookout	John McMannus	Vallejo.
Mare, six years old, Yankee	John McMannus	Vallejo.
Gelding, two years old, Acme	A. J. McPike	Vallejo.
Filly, two years old, Julia	John McMannus	Vallejo.
CLASS VI—CARRIAGE AND SADDLE HORSES.		
Geldings, George and Ed	S. Corcoran	Vallejo.
Mare, Pet	Mrs. L. Starr	Vallejo.
Mare, Maggie	H. Pease	Napa.
STANDARD BRED.		
Stallion, four years old, Whippleton	F. W. Loeber	St. Helena.
Stallion, three years old, Free Willie	H. B. Starr	Vallejo.
Stallion, one year old, George Washington	Thos. Smith	Vallejo.
Stallion, one year old, Sugar K	M. Kemper	Vallejo.
Mare, four years old, Malamora	Mrs. Skinner	Napa.
Mare, four years old, Alice B	M. Kemper	Vallejo.
Mare, three years old, Jordan Beauty	Mrs. Skinner	Napa.
Mare, two years old, Hattie G	J. W. Farmer	Vallejo.
Gelding, two years old, Starr K	Thos. Smith	Vallejo.
Suckling colt, Whippleton	M. Kemper	Vallejo.

TRANSACTIONS OF THE
FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS VII—CATTLE—THOROUGHRED.		
Bull, Durham, Duke	A. K. Brown	Vallejo.
Bull, Durham, Roscoe	James Hunter	Vallejo.
Bull, Alderney, Abe Lincoln	Jos. Wilson	Vallejo.
Bull, Jersey, Talbo	James Grogan	Benicia.
Cow, Jersey, Pailfull	Jos. Wilson	Vallejo.
Bull, Holstein, Waterloo	Jos. Wilson	Vallejo.
Cow, Holstein, Princess	Jos. Wilson	Vallejo.
Bull, Jersey, Bob	Mrs. L. Starr	Vallejo.
CLASS VIII—GRADED STOCK.		
Bull, Golddigger	B. C. Holly	Vallejo.
Bull, George W	Jos. Wilson	Vallejo.
Cow, Mollie	A. K. Brown	Vallejo.
Cow, Sallie	A. K. Brown	Vallejo.
CLASS IX—SHEEP.		
Two bucks, graded	P. D. Walsh	Vallejo.
Six ewes, graded	P. D. Walsh	Vallejo.
One buck, Southdown	W. Middleton	Napa.
Five ewes, Southdown	Mrs. L. Starr	Napa.
Three lambs, Southdown	W. Middleton	Napa.
One buck, Shropshire	W. Middleton	Napa.
Three ewes, Shropshire	W. Middleton	Napa.
Three lambs, Shropshire	W. Middleton	Napa.
One buck, Cotswold	Wm. Watson	Napa.
Two ewes, Cotswold	Wm. Watson	Napa.
One buck, Leicester	P. D. Walsh	Vallejo.
CLASS XI—SWINE.		
One boar, Berkshire	F. H. Sanderson	Vallejo.
One sow, Berkshire	F. H. Sanderson	Vallejo.
Two pigs, Berkshire	F. H. Sanderson	Vallejo.
CLASS XII—POULTRY.		
One pair of Bronze turkeys	H. B. Deming	Vallejo.
One pair of Bronze turkeys	Mrs. L. Starr	Vallejo.
One pair of Bronze turkeys	E. McLees	Vallejo.
One pair of Wild turkeys	E. McLees	Vallejo.
One pair of Pekin ducks	H. B. Deming	Vallejo.
One pair of Pekin ducks	Mrs. L. Starr	Vallejo.
Three pairs of Wyandotte chickens	Mrs. L. Starr	Vallejo.
Three pairs of Black Poland chickens	Mrs. L. Starr	Vallejo.
One pair of Game Bantam chickens	Mrs. L. Starr	Vallejo.
One pair of Brown Leghorn chickens	E. McLees	Vallejo.
One pair of White Leghorn chickens	E. McLees	Vallejo.
One pair of Game chickens	E. McLees	Vallejo.
Three pairs of Black Langshan chickens	Commodore Belknap	Vallejo.
Three pairs of White Langshan chickens	Commodore Belknap	Vallejo.
Three pairs of Plymouth Rock chickens	D. W. Harrier	Vallejo.
Best exhibit of poultry	Ed. McLees	Vallejo.

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS I—VEGETABLES AND GRAIN.		
Potatoes	F. Brughelli	Napa.
Potatoes	J. E. Berryman	Napa.
Beets	J. E. Berryman	Napa.
Squashes	F. J. Graves	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Carrots	F. J. Graves	Vallejo.
Barley	F. H. Sanderson	Vallejo.
Oats	F. H. Sanderson	Vallejo.
Squashes	J. Soanes	Vallejo.
Shelled corn	C. B. Deming	Vallejo.
Pumpkins	C. B. Deming	Vallejo.
Hops	Geo. Edgcumbe	Vallejo.
Tomatoes	R. M. Moore	Napa.
Beets	Commodore Belknap	Vallejo.
Celery	Commodore Belknap	Vallejo.
Tomatoes	Commodore Belknap	Vallejo.
Beets	P. D. Walsh	Napa.
Corn	Jas. Hunter	Vallejo.

CLASS II—FRUITS, GRAPES, AND NUTS.

Lemons	P. Grimes	Vallejo.
Pears	Dr. Trull	Vallejo.
Almonds	Dr. Trull	Vallejo.
Two varieties apples	F. De Carlo	Cordelia.
Quinces	F. De Carlo	Cordelia.
Pomegranates	F. De Carlo	Cordelia.
Two varieties plums	F. De Carlo	Cordelia.
Seven varieties grapes	F. De Carlo	Cordelia.
Two varieties almonds	F. De Carlo	Cordelia.
Two varieties grapes	B. Gaffney	Vallejo.
Pears	J. B. Robinson	Vallejo.
Apples	J. B. Robinson	Vallejo.
Missouri grapes	R. M. Moore	Napa.
Nine varieties pears	R. M. Moore	Napa.
Six varieties apples	R. M. Moore	Napa.
Pomegranates	R. M. Moore	Napa.
Almonds	R. M. Moore	Napa.
Three varieties grapes	Land Improvement Co.	Vallejo.
Three varieties watermelons	J. R. Simmons	Napa.
Muskmelons	J. R. Simmons	Napa.
Lemons	F. Walters	Vallejo.
Japanese persimmons	Dr. Anderson	Vallejo.
Lemons	Dr. Anderson	Vallejo.
Navel oranges	Dr. Anderson	Vallejo.
Grapes	Dr. Anderson	Vallejo.
Twenty-six varieties grapes	C. B. Demon	Vallejo.
Best exhibit raisins	C. B. Demon	Vallejo.
Best exhibit almonds	C. B. Demon	Vallejo.
Best exhibit apples	H. B. Deming	Vallejo.
Best exhibit almonds	H. B. Deming	Vallejo.
Exhibit quinces	H. B. Deming	Vallejo.
Cluster of plums	Miller Ranch	Vallejo.
Figs	D. C. Snider	Vallejo.
Two boxes grapes	D. Keefe	Vallejo.
Ten lemons	L. Sharp	Vallejo.
Best exhibit grapes	H. W. Crabb	Oakville.
Exhibit quinces	Mrs. S. Duncan	Vallejo.
Best exhibit canned fruits	Mrs. J. W. Farmer	Vallejo.
Exhibit canned fruits	C. B. Demon	Vallejo.

CLASS III—DRIED FRUITS AND PRESERVES.

Canned peaches	Mrs. J. W. Farmer	Vallejo.
One jar preserved pears	Mrs. J. W. Farmer	Vallejo.
One jar preserved watermelons	Mrs. J. W. Farmer	Vallejo.
One jar preserved tomatoes	Mrs. J. W. Farmer	Vallejo.
One jar preserved apples	Mrs. J. W. Farmer	Vallejo.
One jar preserved quinces	Mrs. J. W. Farmer	Vallejo.
One jar spiced melon	Mrs. J. W. Farmer	Vallejo.
One jar chowchow	Mrs. J. W. Farmer	Vallejo.
One bottle tomato catsup	Mrs. J. W. Farmer	Vallejo.
Canned quinces	Mrs. J. W. Farmer	Vallejo.
Canned blackberries	Mrs. J. W. Farmer	Vallejo.
Canned cherries	Mrs. J. W. Farmer	Vallejo.
Canned pears	Mrs. J. W. Farmer	Vallejo.
Dried apples	C. B. Deming	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Preserves.....	C. B. Deming.....	Vallejo.
Jellies.....	C. B. Deming.....	Vallejo.
Pickles.....	C. B. Deming.....	Vallejo.
Six bottles catsup.....	Joseph Soanes.....	Vallejo.
Exhibit of groceries.....	D. W. Harrier.....	Vallejo.
Exhibit of ham.....	D. W. Harrier.....	Vallejo.
Exhibit of bacon.....	D. W. Harrier.....	Vallejo.
CLASS IV—BUTTER AND CHEESE.		
Box of butter.....	F. Brughelli.....	Napa.
Seventy-five rolls of butter.....	J. W. Farmer.....	Vallejo.
Best exhibit cheese.....	D. W. Harrier.....	Vallejo.
Best exhibit cornmeal.....	D. W. Harrier.....	Vallejo.
CLASS V—WINE, CIDER, AND ALE.		
Cider, soda, and ginger ale.....	F. O'Grady.....	Vallejo.
California wines.....	M. M. Estee.....	Napa.
California wines.....	H. W. Crabb.....	Oakville.
California brandy.....	H. W. Crabb.....	Oakville.
California ale.....	F. O'Grady.....	Vallejo.
California cider.....	F. O'Grady.....	Vallejo.
California soda.....	F. Michaelis.....	Vallejo.
CLASS VI—DOMESTIC MANUFACTURES.		
Butter box.....	J. W. Farmer.....	Vallejo.
Patent derrick.....	Geo. Rounds.....	Vallejo.
Washing machine.....	H. Allen.....	Vallejo.
Wringer.....	H. Allen.....	Vallejo.
Stamping blocks.....	Mrs. J. C. Brown.....	Vallejo.
Paper cane.....	P. Dolan.....	Vallejo.
Mechanical exhibit.....	D. G. Barnes.....	Vallejo.
Exhibit of horseshoeing.....	F. M. Denio.....	Vallejo.
Patent miters.....	J. Beverley.....	Vallejo.
Pruning shears.....	Briggs & Jacobson.....	Napa.
Singletree.....	Briggs & Jacobson.....	Napa.
Rag carpets.....	D. Wallenbaugh.....	Vallejo.
Blacksmithing.....	O. L. Henderson.....	Vallejo.
CLASS VII—CARRIAGES, WAGONS, ETC.		
Carriages, wagons, and buggies.....	O. L. Henderson.....	Vallejo.
Buggy.....	O. L. Henderson.....	Vallejo.
Carriage painting.....	O. L. Henderson.....	Vallejo.
Carriage blacksmithing.....	O. L. Henderson.....	Vallejo.
Carts.....	O. L. Henderson.....	Vallejo.
Gang plow.....	O. L. Henderson.....	Vallejo.
Cultivator.....	O. L. Henderson.....	Vallejo.
CLASS VIII—SADDLERY AND HARNESS.		
Saddlery and harness.....	Geo. Richart.....	Vallejo.
Double harness.....	Geo. Richart.....	Vallejo.
Single harness.....	Geo. Richart.....	Vallejo.
Saddles.....	Geo. Richart.....	Vallejo.
CLASS X—PAINTING AND ORNAMENTAL.		
Hair wreath.....	Mrs. F. Gorham.....	Vallejo.
Umbrella case.....	Mrs. F. Gorham.....	Vallejo.
Old man and woman, in worsted.....	Mrs. F. Gorham.....	Vallejo.
Exhibits of photographs.....	J. G. Smith.....	Vallejo.
Cabinet of mineral specimens.....	H. Bernhard.....	Vallejo.
Fifty-eight pieces ornamental work.....	Mrs. Painter's art class.....	Vallejo.
Chrysanthemum.....	Miss Flora Hunter.....	Vallejo.
Calla lilies.....	Miss Flora Hunter.....	Vallejo.
Roses and pansies.....	Miss Flora Hunter.....	Vallejo.
Piano cover.....	Miss Flora Hunter.....	Vallejo.
Marine view, painting.....	Miss Maggie Tobin.....	Vallejo.
Scene in Adirondack, painting.....	Miss Maggie Tobin.....	Vallejo.
Scene in Autumn, painting.....	Miss Maggie Tobin.....	Vallejo.
White flowers, painting.....	Miss Maggie Tobin.....	Vallejo.
Roses, painting.....	Miss Maggie Tobin.....	Vallejo.
Grapes, painting.....	Aggie Hunter.....	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Storm scene, painting.....	Aggie Hunter	Vallejo.
Ornamental, painting.....	Aggie Hunter	Vallejo.
Oranges, painting.....	Miss M. Engelbright	Vallejo.
Autumn scene, painting.....	Miss M. Engelbright	Vallejo.
Snow scene, painting.....	Miss M. Engelbright	Vallejo.
Mirror Lake, painting.....	Miss M. Engelbright	Vallejo.
Scenes in Scotland, painting.....	Miss M. Engelbright	Vallejo.
Trumpet flowers, painting.....	Miss Jessie Brownlee	Vallejo.
Hollyhocks, painting.....	Miss Jessie Brownlee	Vallejo.
Poppies, painting.....	Miss Jessie Brownlee	Vallejo.
Mount Tamalpais, painting.....	Mrs. W. C. Turner	Vallejo.
Mare Island, painting.....	Mrs. W. C. Turner	Vallejo.
Snowstorm, painting.....	Mrs. W. C. Turner	Vallejo.
Golden Gate, painting.....	Mrs. W. C. Turner	Vallejo.
Floral, painting.....	Mrs. W. C. Turner	Vallejo.
Three Tiles, painting.....	Mrs. T. Wallace	Vallejo.
Monterey Bay, painting.....	Mrs. T. Wallace	Vallejo.
Landscape, painting.....	Mrs. T. Wallace	Vallejo.
Pastoral landscape, painting.....	Mrs. T. Wallace	Vallejo.
Clematis, painting.....	Mrs. T. Wallace	Vallejo.
Trumpet Vine, painting.....	Mrs. T. Wallace	Vallejo.
Ornamental painting.....	Mrs. T. Wallace	Vallejo.
Hair wreath.....	Mrs. H. L. Howard	Vallejo.
Three oil paintings.....	Mrs. H. L. Howard	Vallejo.
Panel of roses, painting.....	Mrs. Painter's art class	Vallejo.
Peacock, painting.....	Mrs. Painter's art class	Vallejo.
Roses, painting.....	Mrs. Painter's art class	Vallejo.
Wood scene, painting.....	Mrs. Painter's art class	Vallejo.
Panel for screen, painting.....	Mrs. Painter's art class	Vallejo.
Yosemite Valley, painting.....	Mrs. Painter's art class	Vallejo.
Moss pictures, painting.....	Mrs. F. W. Ford	Vallejo.
California landscape lake, painting.....	Miss M. Engelbright	Vallejo.
Golden Gate, painting.....	Mrs. W. C. Turner	Vallejo.
Yosemite Valley, painting.....	Miss Damuth	Vallejo.
Penmanship.....	Fred. Hunt	Vallejo.
Penmanship from public school.....	D. Edgcumbe	Vallejo.
Hair work.....	Mrs. J. C. Brown	Vallejo.
Oil paintings.....	Miss J. McCudden	Vallejo.
Crayons.....	Miss J. McCudden	Vallejo.
Hair wreath.....	Mrs. J. Horn	Vallejo.
Kensington painting.....	Mrs. A. H. Richart	Vallejo.
Kensington painting.....	Miss Mary McGrain	Vallejo.
Bead basket.....	Nellie Dalton	Vallejo.
Napkin ring.....	Nellie Dalton	Vallejo.
Burning Lake, painting.....	R. B. Boyle	Vallejo.
Twelve pieces oil paintings.....	R. B. Boyle	Vallejo.
Four kensington paintings.....	R. B. Boyle	Vallejo.
Three pieces in water colors.....	Miss Alice Boyle	Vallejo.
Fancy and job printing.....	Pennycook & Harrier	Vallejo.
Newspaper printing.....	Pennycook & Harrier	Vallejo.
Four oil paintings on canvas.....	Miss Mamie Lamb	Vallejo.
One piece pastel painting.....	Miss Mamie Lamb	Vallejo.
Two water colors.....	Miss Mamie Lamb	Vallejo.
Sketch in India ink.....	Miss Mamie Lamb	Vallejo.
Three small paintings.....	Miss Mamie Lamb	Vallejo.
Three oil panel paintings.....	Miss Mamie Lamb	Vallejo.
One landscape painting.....	Miss Mamie Lamb	Vallejo.
Ornamental work.....	Mrs. Alex Scott	Vallejo.
One tidy.....	Mrs. Alex Scott	Vallejo.
Umbrella stand.....	Mrs. F. W. Gorham	Vallejo.
Two jars.....	Mrs. W. C. Turner	Vallejo.
Two oil paintings.....	Mrs. F. E. Smith	Vallejo.
One banner, Golden Rod.....	Mrs. F. E. Smith	Vallejo.
White velvet paintings.....	Mrs. F. E. Smith	Vallejo.
Table scarf.....	Mrs. D. G. Barnes	Vallejo.
Ornamental work.....	Mrs. D. G. Barnes	Vallejo.
Hair bracelets.....	Mrs. Martin Aden	Vallejo.
Ladies' watch chains.....	Mrs. Martin Aden	Vallejo.
Breastpin.....	Mrs. Martin Aden	Vallejo.
Finger rings.....	Mrs. Martin Aden	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Plaques, painted	Miss Lizzie Tobin	Vallejo.
One vase, painted	Miss Lizzie Tobin	Vallejo.
Five pictures, painted	Chas. McGettigan	Vallejo.
One wax cross	E. McGuire	Vallejo.
Wax work	Mrs. A. C. Berg	Vallejo.
Piano cover, painted	Flora Hunter	Vallejo.
Exhibit of paintings	Miss M. K. Lundquest	Vallejo.
Crayon work	Miss Jennie Hall	Vallejo.
Pencil drawing	R. Robinson	Vallejo.
Kensington painting	Mrs. F. W. Ford	Vallejo.
Wax work	Miss McCudden	Vallejo.
Hair work	Mrs. Geo. Greenwood	Vallejo.
Painting from nature	Mrs. M. Damuth	Vallejo.
Collection of paintings	Mrs. Painter's artclass	Vallejo.
Collection of paintings	Mrs. Painter	Vallejo.
Collection of paintings on canvas	Miss Adela Hilton	Vallejo.
CLASS XI—EMBROIDERY AND NEEDLEWORK.		
Masonic apron	Mrs. J. W. Farmer	Vallejo.
Patchwork quilts	Mrs. J. Wilson	Vallejo.
Rope rings	S. Sampson	Vallejo.
Twine baskets	S. Sampson	Vallejo.
Lambrequins	Mrs. J. Wilson	Vallejo.
Net tidies	Mrs. J. W. Farmer	Vallejo.
Plaque	Mrs. F. Mansen	Vallejo.
Worsted wreath	Miss Emma Cobby	Vallejo.
Embroidered aprons	Miss Kate Hendrickson	Vallejo.
Worsted pictures	Mrs. F. Gorham	Vallejo.
Embroidered banners	Mrs. F. Gorham	Vallejo.
Sofa pillow	Mrs. F. Gorham	Vallejo.
Table scarf	Mrs. F. Gorham	Vallejo.
Slipper case	Mrs. F. Gorham	Vallejo.
Piano cover	Mrs. F. Gorham	Vallejo.
Child's dress	Mrs. Joe Edge	Vallejo.
Child's apron	Mrs. Joe Edge	Vallejo.
Child's collar	Mrs. Joe Edge	Vallejo.
Crochet lace	Mrs. Joe Edge	Vallejo.
Millinery	Kate McEnerny	Vallejo.
Masonic badge banner	Miss Elizabeth Wakely	Vallejo.
Satin shams	Miss Kate Flemming	Vallejo.
Etched aprons	Miss Winnie Philipps	Vallejo.
Stockings	Miss Winnie Philipps	Vallejo.
Gray stockings	Miss Winnie Philipps	Vallejo.
Crochet shams	Miss Bertha Hirsch- field	Vallejo.
Chemise yoke	Miss Bertha Hirsch- field	Vallejo.
Seven pieces crochet lace	Miss Bertha Hirsch- field	Vallejo.
Picture of ship	H. Johnson	Vallejo.
Pign scarf	Miss Lizzie Tobin	Vallejo.
Music rack and banners	Miss Lizzie Tobin	Vallejo.
Crazy quilt	Mrs. E. D. Brennan	Vallejo.
Fancy work	Miss E. L. Coats	Vallejo.
Two tidies	Miss E. L. Coats	Vallejo.
Crochet edging	Miss Edna Greenwood	Vallejo.
Patchwork	Miss Jessie Greenwood	Vallejo.
Crochet edging	Miss Jessie Greenwood	Vallejo.
Silk embroidery	Miss Minnie New- combe	Vallejo.
Table cover	Miss Minnie New- combe	Vallejo.
Crochet lamp shade	Mrs. M. Newcombe	Vallejo.
Needlework	Mrs. M. Newcombe	Vallejo.
Needlework	Mrs. J. M. Breed	Vallejo.
Table scarf	Mrs. F. Gorham	Vallejo.
Embroidered box	Mrs. F. Gorham	Vallejo.
Kensington embroidery	Mrs. F. Gorham	Vallejo.
Painted jars	Mrs. F. Gorham	Vallejo.
Dresses and caps	Mrs. Daisy Emerson	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Embroidered shawl.....	Mrs. A. E. Edgcumbe.....	Vallejo.
Crochet lace.....	Mrs. A. E. Edgcumbe.....	Vallejo.
Crazy quilt.....	Miss Maud Newcombe.....	Vallejo.
Patchwork.....	Mrs. C. A. Johnson.....	Vallejo.
Chenille cushion.....	Mrs. C. A. Johnson.....	Vallejo.
Table scarf.....	Miss Mamie Lamb.....	Vallejo.
Etched aprons.....	Miss Ella Hurley.....	Vallejo.
Etched aprons.....	Miss Mamie Welsh.....	Vallejo.
Silk embroidery.....	Mrs. P. Rothenbusch.....	Vallejo.
Lambrequins.....	Mrs. P. Rothenbusch.....	Vallejo.
Banner.....	Mrs. P. Rothenbusch.....	Vallejo.
Handkerchief case, chenille.....	Mrs. P. Rothenbusch.....	Vallejo.
Sofa cushion.....	Mrs. P. Rothenbusch.....	Vallejo.
Slumber pillow.....	Mrs. P. Rothenbusch.....	Vallejo.
Knitted stockings.....	Mrs. Maulbecker.....	Vallejo.
Needlework apron.....	Miss Julia Hayes.....	Vallejo.
Crochet and knit buggy robe.....	Mrs. J. Steffen.....	Vallejo.
Apron knitting.....	Mrs. D. G. Barnes.....	Vallejo.
Rugs.....	Mrs. A. Windslow.....	Vallejo.
Crochet skirts.....	Mrs. F. W. Loeber.....	St. Helena.
Two exhibits crochet.....	Mrs. F. W. Loeber.....	St. Helena.
One exhibit beadwork.....	Mrs. F. W. Loeber.....	St. Helena.
Washing and ironing.....	Mrs. A. J. McPike.....	St. Helena.
Child's dress.....	Mrs. A. J. McPike.....	St. Helena.
Three crochet yokes.....	Miss Mamie Springer.....	St. Helena.
Three crayon pictures.....	Miss Jennie Hall.....	St. Helena.
CLASS XII.		
Cakes.....	Miss Isabelle Roney.....	Vallejo.
Cakes and tarts.....	Miss E. C. Corwin.....	Vallejo.
Bread and cakes.....	Miss M. Demming.....	Vallejo.
Bread.....	Miss P. Snider.....	Vallejo.
Confectionery.....	A. J. Tioilegar.....	Vallejo.
Variety of cakes.....	Mrs. A. J. McPike.....	Vallejo.
Variety of bread.....	Mrs. A. J. McPike.....	Vallejo.
Cake and cornbread.....	Mrs. A. J. McPike.....	Vallejo.
Brown bread and cake.....	Mrs. A. J. McPike.....	Vallejo.
Graham bread and cake.....	Mrs. A. J. McPike.....	Vallejo.
White bread and cake.....	Mrs. A. J. McPike.....	Vallejo.
Rye bread and cake.....	Mrs. A. J. McPike.....	Vallejo.
Gingerbread and cake.....	Mrs. A. J. McPike.....	Vallejo.
Cocoanut cream cake.....	Miss Estell McCool.....	Vallejo.
Graham bread.....	Miss Estell McCool.....	Vallejo.
White bread.....	Miss Maud Mansen.....	Vallejo.
Cornbread and tarts.....	Mrs. James Tobin.....	Vallejo.
Cream cake.....	Miss Ada Holton.....	Vallejo.
Cake.....	Miss Ella Johnson.....	Vallejo.
Sewing machine work.....	Mrs. G. W. Edgcumbe.....	Vallejo.
Washing and ironing.....	Mrs. G. W. Edgcumbe.....	Vallejo.
Pieces crochet work.....	Dollie Edgcumbe.....	Vallejo.
Knitting.....	Winnie Phillips.....	Vallejo.
Needlework and lace.....	Mrs. F. W. Ford.....	Vallejo.
Kensington and Masonic banner.....	Mrs. F. W. Ford.....	Vallejo.
Lady's dress.....	Mrs. S. Edgcumbe.....	Vallejo.
Child's dress.....	Mrs. S. Edgcumbe.....	Vallejo.
Quilting.....	Mrs. S. Edgcumbe.....	Vallejo.
Needlework.....	Mrs. S. Edgcumbe.....	Vallejo.
Crocheted shawl.....	Mrs. L. Webster.....	Vallejo.
Two pair curtain holders.....	Mrs. Jas. McCudden.....	Vallejo.
Ten fancy rugs.....	Mrs. Jas. McCudden.....	Vallejo.
Two crazy quilts.....	Miss M. McCudden.....	Vallejo.
Pillow shams.....	Miss M. McCudden.....	Vallejo.
Waxwork.....	Miss M. McCudden.....	Vallejo.
Pillow shams.....	Mrs. A. H. Richart.....	Vallejo.
Lacework.....	Mrs. A. H. Richart.....	Vallejo.
Crewel and applique.....	Mrs. A. H. Richart.....	Vallejo.
Crocheted scarf.....	Miss Nellie Dalton.....	Vallejo.
Slippers.....	Miss Nellie Dalton.....	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
Two sofa pillows	Mrs. Robert and Miss Mattie Brown.	Vallejo.
Piano scarf	Mrs. Robert and Miss Mattie Brown.	Vallejo.
Pincushion	Mrs. Robert and Miss Mattie Brown.	Vallejo.
Slumber roll	Mrs. Robert and Miss Mattie Brown.	Vallejo.
Painted teapot	Mrs. Robert and Miss Mattie Brown.	Vallejo.
Crocheted spread and sham	Miss Emma Williams.	Vallejo.
Knitting work	Mrs. E. D. Pennycook.	Vallejo.
Two Chinese yokes	Mrs. E. D. Pennycook.	Vallejo.
Silk knitting	Mrs. E. D. Pennycook.	Vallejo.
Cotton knitting	Mrs. E. D. Pennycook.	Vallejo.
Knitted undervest	Mrs. E. D. Pennycook.	Vallejo.
Tatting work	Mrs. E. D. Pennycook.	Vallejo.
Collars and cuffs	Mrs. E. D. Pennycook.	Vallejo.
Sewing machine work	Z. T. Justus.	Vallejo.
Hair wreath	Mrs. Geo. Greenwood.	Vallejo.
Feather wreath	Mrs. Geo. Greenwood.	Vallejo.
Lace collars	Mrs. Geo. Greenwood.	Vallejo.
Tidy	Mrs. Geo. Greenwood.	Vallejo.
Aprons, tatting	Mrs. Geo. Greenwood.	Vallejo.
Three aprons	Miss Jennie Halliday.	Vallejo.
Three yokes	Miss Jennie Halliday.	Vallejo.
Crazy cushion	Miss Mamie Mansen.	Vallejo.
Crocheted skirt	Miss Mamie Mansen.	Vallejo.
Tufted cushion	Miss Mary McGrain.	Vallejo.
Sofa cushion	Miss Mary McGrain.	Vallejo.
Worsted picture	Miss Mary McGrain.	Vallejo.
Toilet set	Miss Mary McGrain.	Vallejo.
Eight pieces knitting	Miss Mary McGrain.	Vallejo.
Crocheted spread	Miss Mary McGrain.	Vallejo.
Crocheted shawl	Miss Mary McGrain.	Vallejo.
Four pieces crochet	Miss Mary McGrain.	Vallejo.
One book crochet	Miss Mary McGrain.	Vallejo.
Sofa cushion	Miss Grace Howard.	Vallejo.
Crazy quilt	Mrs. F. Gorham.	Vallejo.
Table scarf	Mrs. F. Gorham.	Vallejo.
Pincushion	Mrs. F. Gorham.	Vallejo.
Point lace	Mrs. E. C. Corwin.	Vallejo.
Needlework	Mrs. E. C. Corwin.	Vallejo.
Crazy quilt	Mrs. F. Hunter.	Vallejo.
Buggy robe	Mrs. F. Hunter.	Vallejo.
Crazy quilt	Miss M. Englebright.	Vallejo.
Ornamental table cover	Miss Jessie Brownlie.	Vallejo.
Two rag rings	Mrs. Thos. Brownlie.	Vallejo.
Jing Frau	Miss Adelia Hilton.	Vallejo.
Mount Hood, painting	Miss Adelia Hilton.	Vallejo.
Tropical scene, painting	Miss Adelia Hilton.	Vallejo.
Door panel, painting	Miss Adelia Hilton.	Vallejo.
Flag lilies, painting	Miss Adelia Hilton.	Vallejo.
Rag carpet	F. H. Sanderson.	Vallejo.
Two pictures	Peter Wright.	Vallejo.
Robe and Masonic banner	Mrs. D. W. Harrier.	Vallejo.
Three tidies	Mrs. D. W. Harrier.	Vallejo.
Shoulder scarf	Mrs. D. W. Harrier.	Vallejo.
Crocheting	Mrs. D. W. Harrier.	Vallejo.
Pillow shams	Miss Maud Harrier.	Vallejo.
Three pieces etching	Miss Maud Harrier.	Vallejo.
Cotton embroidery	Mrs. G. W. Edgcumbe.	Vallejo.
Child's dress	Mrs. G. W. Edgcumbe.	Vallejo.

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.
CLASS XIII.		
Seven pots of ferns	Miss Ray Cassady	Vallejo.
Flowers	Mrs. H. Englebright	Vallejo.
Eight house plants	Mrs. J. C. Brown	Vallejo.
Variety of plants	Mrs. P. Hassett	Vallejo.
Seven pots of plants	Mrs. H. Englebright	Vallejo.
Ornamental plants	Miss E. McGuire	Vallejo.
Two baskets of flowers	Miss E. McGuire	Vallejo.
Stand of plants	Miss E. McGuire	Vallejo.
Floral design	Miss Frankie Demon	Vallejo.
Floral design	Mrs. H. Englebright	Vallejo.
Evergreen berry	Joseph Beyerle	Vallejo.
CLASS XV.		
Basket of flowers	Miss Kate Sweeney	Vallejo.
Painting on china	Miss Alice Bogle	Vallejo.
Pampas grass	Mrs. J. W. Farmer	Vallejo.
Paper flowers	Miss K. McCudden	Vallejo.
Paper flowers	Miss Mabel Fisher and Z. White	Vallejo.
Fan of flowers	Miss Mabel Fisher and Z. White	Vallejo.
Plaque	Miss Mabel Fisher and Z. White	Vallejo.
Paper flowers	Miss Flora Cassady	Vallejo.
Easel, basket, and tripod	Miss Flora Cassady	Vallejo.
Paper flowers	Miss Belle Roney	Vallejo.
Little carriage	Miss Belle Roney	Vallejo.
Tripod	Miss Belle Roney	Vallejo.
Collection of pictures	Miss Sadie Gorham	Vallejo.
Continental money	Miss Rudolph Walker	Vallejo.
Newspaper of 1800	Mrs. George Johnson	Vallejo.
Newspaper of 1800	Joseph Barrigan	Vallejo.
Greatest variety of buttons	Miss Liddie Wilson	Vallejo.

PREMIUMS AWARDED—1887.

FIRST DEPARTMENT.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Stallion, three years old	B. C. Holly	Vallejo	\$10 00
Stallion, two years old	B. C. Holly	Vallejo	\$5 00
Mare, four years old	B. C. Holly	Vallejo	\$15 00
Mare, three years old	B. C. Holly	Vallejo	\$10 00
Mare, two years old	B. C. Holly	Vallejo	\$5 00
Mare, one year old	B. C. Holly	Vallejo	\$2 50
CLASS II.			
Stallion, four years old	F. Burghelli	Napa	\$10 00
Stallion, four years old	F. Burghelli	Napa	\$5 00
Mare, four years old	Mrs. S. S. Drake	Vallejo	\$10 00
Family of colts (all ages)	J. W. Farmer	Vallejo	\$10 00
CLASS III.			
Stallion, four years old	Cal. Reames	Suisun	\$10 00
CLASS IV.			
Stallion, four years old	E. J. Upham	Vallejo	\$10 00
Stallion, four years old	H. W. Deming	Vallejo	\$7 50
Stallion, three years old	P. D. Walsh	Vallejo	\$7 50
Mare, four years old	C. B. Deming	Vallejo	\$10 00
Suckling colts	E. J. Upham	Rio Vista	\$3 00
Suckling colts	M. Hagen	Napa	\$2 00
Suckling colts (special)	C. B. Deming	Vallejo	\$2 00
CLASS V.			
Stallion, four years old	B. C. Holly	Vallejo	\$10 00
Stallion, four years old	Thomas Smith	Vallejo	\$5 00
Mare, four years old	Mrs. Skinner	Napa	\$5 00
Mare, four years old	A. J. McPike	Vallejo	\$10 00
Mare, four years old	F. H. Sanderson	Vallejo	\$3 00
Gelding, two years old	A. J. McPike	Vallejo	\$5 00
CLASS VI.			
Carriage team	S. Corcoran	Vallejo	\$10 00
Buggy animal	Mrs. L. Starr	Vallejo	\$7 50
Buggy animal	H. Pease	Napa	\$5 00
Stallion, four years old	F. W. Leober	St. Helena	\$10 00
Stallion, three years old	H. B. Starr	Vallejo	\$7 50
Stallion, one year old	Thomas Smith	Vallejo	\$3 00
Mare, four years old	Mrs. Skinner	Napa	\$10 00
Mare, four years old	M. Kemper	Vallejo	\$5 00
Mare, three years old	Mrs. Skinner	Napa	\$7 50
Mare, two years old	J. W. Farmer	Vallejo	\$5 00
Gelding, two years old	Thomas Smith	Vallejo	\$5 00
Suckling colts	M. Kemper	Vallejo	\$2 00
CLASS VII.			
Bull, Durham	A. K. Brown	Vallejo	\$10 00
Bull, Durham	James Hunter	Vallejo	\$5 00
Cow, Alderney	Joseph Wilson	Vallejo	\$10 00
Bull, Jersey	James Grogan	Benicia	\$10 00
Cow, Jersey	Joseph Wilson	Vallejo	\$10 00
Bull, Holstein	Joseph Wilson	Vallejo	\$10 00
Cow, Holstein	Joseph Wilson	Vallejo	\$5 00
Bull, Jersey, two years old	Mrs. L. Starr	Vallejo	\$2 50

FIRST DEPARTMENT—Continued.

Name of Animal.	Exhibitor.	P. O. Address.	Award.
CLASS VIII.			
Bull, graded (special).....	B. C. Holly.....	Vallejo.....	\$5 00
Bull, graded.....	Joseph Wilson.....	Vallejo.....	\$5 00
Cow, graded.....	A. K. Brown.....	Vallejo.....	\$10 00
Cow, graded.....	A. K. Brown.....	Vallejo.....	\$5 00
CLASS IX.			
Graded, two bucks.....	P. D. Walsh.....	Vallejo.....	\$5 00
Graded, six ewes.....	P. D. Walsh.....	Vallejo.....	\$5 00
Southdown, one buck.....	Wm. Middleton.....	Napa.....	\$5 00
Southdown, five ewes.....	Mrs. L. Starr.....	Vallejo.....	\$5 00
Southdown, three lambs.....	Wm. Middleton.....	Napa.....	\$3 00
Southdown, one buck.....	Wm. Middleton.....	Napa.....	\$5 00
Shropshire, three ewes.....	Wm. Middleton.....	Napa.....	\$5 00
Shropshire, three lambs.....	Wm. Middleton.....	Napa.....	\$3 00
Cotswold, one buck.....	Wm. Watson.....	Napa.....	\$5 00
Cotswold, two ewes.....	Wm. Watson.....	Napa.....	\$3 50
Leicester, one buck.....	P. D. Walsh.....	Vallejo.....	\$5 00
CLASS XI.			
Berkshire boar.....	F. H. Sanderson.....	Vallejo.....	\$5 00
CLASS XII.			
Turkeys, Bronze.....	E. McLees.....	Vallejo.....	\$5 00
Chickens, Wyandottes.....	Mrs. L. Starr.....	Vallejo.....	\$2 50
Chickens, Polands.....	Mrs. L. Starr.....	Vallejo.....	\$2 50
Chickens, Bantams.....	Mrs. L. Starr.....	Vallejo.....	\$5 00
Chickens, Brown Leghorns.....	E. McLees.....	Vallejo.....	\$5 00
Chickens, White Leghorns.....	E. McLees.....	Vallejo.....	\$5 00
Chickens, Game.....	E. McLees.....	Vallejo.....	\$5 00
Chickens, Langshan Black.....	Commodore Belknap.....	Vallejo.....	\$5 00
Chickens, Plymouth Rocks, six pair.....	D. W. Harrier.....	Vallejo.....	\$2 50
Chickens, best exhibit.....	E. McLees.....	Vallejo.....	\$10 00

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Potatoes.....	F. Brughelli.....	Napa.....	\$5 00
Squashes.....	F. J. Graves.....	Vallejo.....	\$2 50
Barley.....	F. H. Sanderson.....	Vallejo.....	\$3 00
Oats.....	F. H. Sanderson.....	Vallejo.....	\$3 00
Corn.....	C. B. Deming.....	Vallejo.....	\$5 00
Hops.....	Geo. Edgumbe.....	Vallejo.....	\$3 00
Beets.....	P. D. Walsh.....	Vallejo.....	\$2 50
Growing corn.....	Jas. Hunter.....	Vallejo.....	\$5 00
Best exhibit of flour, meals, etc.....	Starr & Co.....	Vallejo.....	\$25 00
CLASS II.			
Lemons.....	P. Grimes.....	Vallejo.....	\$2 50
Apples, three varieties.....	F. De Carlo.....	Cordelia.....	\$2 50
Grapes.....	B. Gaffney.....	Cordelia.....	\$2 50
Nine varieties pears.....	R. M. Moore.....	Napa.....	\$2 50
Six varieties apples.....	R. M. Moore.....	Napa.....	\$2 00
Pomegranates.....	R. M. Moore.....	Napa.....	\$1 00
Three varieties watermelons.....	J. R. Simmons.....	Napa.....	\$2 00
One variety muskmelons.....	J. R. Simmons.....	Napa.....	\$2 00
Navel oranges.....	W. D. Anderson.....	Napa.....	\$2 50
Twenty-six varieties grapes.....	C. B. Deming.....	Napa.....	\$10 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Raisins.....	C. B. Deming.....	Napa.....	\$5 00
Plums.....	Rudolph Miller.....	Napa.....	\$2 50
Figs.....	D. C. Snider.....	Napa.....	\$2 50
Quinces.....	S. Duncan.....	Napa.....	\$2 50
Canned fruits.....	J. W. Farmer.....	Napa.....	\$2 50
Canned fruits.....	C. B. Deming.....	Napa.....	\$2 50
CLASS III.			
Preserves.....	J. W. Farmer.....	Vallejo.....	\$2 00
Catsup.....	J. W. Farmer.....	Vallejo.....	\$2 00
Dried apples.....	C. B. Deming.....	Vallejo.....	\$1 00
Preserves.....	C. B. Deming.....	Vallejo.....	\$2 00
Jellies.....	C. B. Deming.....	Vallejo.....	\$5 00
Pickles.....	C. B. Deming.....	Vallejo.....	\$2 00
Groceries.....	D. W. Harrier.....	Vallejo.....	\$5 00
Hams.....	D. W. Harrier.....	Vallejo.....	\$2 00
Bacon.....	D. W. Harrier.....	Vallejo.....	\$2 00
CLASS IV.			
Best exhibit butter.....	F. Brughelli.....	Napa.....	\$5 00
Best twenty-five rolls butter.....	J. W. Farmer.....	Vallejo.....	\$2 50
Best exhibit cheese.....	D. W. Harrier.....	Vallejo.....	\$5 00
Best exhibit corn meal.....	D. W. Harrier.....	Vallejo.....	\$5 00
CLASS V.			
California wines.....	M. M. Estee.....	Napa.....	\$5 00
Best exhibit California wines.....	H. W. Crabb.....	Oakville.....	\$25 00
Best exhibit California brandy.....	H. W. Crabb.....	Oakville.....	\$5 00
Best exhibit ale.....	F. O'Grady.....	Vallejo.....	\$2 50
Best exhibit cider.....	F. O'Grady.....	Vallejo.....	\$2 00
Best exhibit soda.....	F. Michaelis.....	Vallejo.....	\$2 00
Best exhibit California wines.....	H. W. Crabb.....	Vallejo.....	\$15 00
Best exhibit California brandy.....	H. W. Crabb.....	Vallejo.....	\$2 50
CLASS VI.			
Butter box.....	J. W. Farmer.....	Vallejo.....	\$1 00
Derrick.....	Geo. Rounds.....	Vallejo.....	\$5 00
Washing machine.....	Hiram Allen.....	Vallejo.....	\$2 50
Stamping blocks.....	J. C. Brown.....	Vallejo.....	\$2 50
Mechanical exhibit.....	D. G. Barnes.....	Vallejo.....	\$15 00
Horse-shoeing.....	F. M. Denio.....	Vallejo.....	\$10 00
Miter machine.....	Joseph Beyerle.....	Vallejo.....	\$2 50
Pruning shears.....	Briggs & Jacobin- son.....	Yountville.....	\$2 50
Singletree.....	Briggs & Jacobin- son.....	Yountville.....	\$2 50
Rag carpets.....	D. Wallenbaugh.....	Vallejo.....	\$5 00
Blacksmithing.....	O. L. Henderson.....	Vallejo.....	\$2 50
Best exhibit pianos.....	Thos. Smith.....	Vallejo.....	\$10 00
Best exhibit dry goods, etc.....	S. Dannenbaum.....	Vallejo.....	\$15 00
Best exhibit carpets.....	S. Dannenbaum.....	Vallejo.....	\$5 00
Best exhibit hardware, etc.....	Winchell & Co.....	Vallejo.....	\$10 00
Best exhibit drugs and surgical imple- ments.....	Angus & Trull.....	Vallejo.....	\$10 00
Best exhibit sewing machines.....	Z. T. Justus.....	Vallejo.....	\$5 00
CLASS VII.			
Best exhibit buggy.....	O. L. Henderson.....	Vallejo.....	\$5 00
Best exhibit carriage painting.....	O. L. Henderson.....	Vallejo.....	\$5 00
Best exhibit carriage blacksmithing.....	O. L. Henderson.....	Vallejo.....	\$20 00
Best carts.....	O. L. Henderson.....	Vallejo.....	\$5 00
Best exhibit gang plow.....	O. L. Henderson.....	Vallejo.....	\$5 00
Best exhibit cultivator.....	O. L. Henderson.....	Vallejo.....	\$2 50
CLASS VIII.			
Best exhibit saddlery and harness.....	Geo. Richart.....	Vallejo.....	\$5 00
Best exhibit double harness.....	Geo. Richart.....	Vallejo.....	\$2 50
Best exhibit single harness.....	Geo. Richart.....	Vallejo.....	\$2 00

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS X.			
Best exhibit photographs.....	J. G. Smith.....	Vallejo.....	\$5 00
Best cabinet of minerals.....	H. Bernhard.....	Vallejo.....	\$4 00
Fifty-eight pieces paint and ornamental work.....	Art class.....	Vallejo.....	\$5 00
Best chrysanthemum.....	Mrs. F. Hunter.....	Vallejo.....	\$5 00
Best white flowers.....	Miss M. Tobin.....	Vallejo.....	\$3 00
Best ornamental painting.....	Miss Aggie Hunter.....	Vallejo.....	\$4 00
Autumn scene, painting.....	Miss M. Englebright.....	Vallejo.....	\$4 00
Mirror Lake, painting.....	Miss M. Englebright.....	Vallejo.....	\$5 00
Poppies, from nature, painting.....	Miss J. Brownlie.....	Vallejo.....	\$4 00
Tamalpais, painting.....	Mrs. W. C. Turner.....	Vallejo.....	\$4 00
Pastoral landscape, painting.....	Mrs. T. Wallace.....	Vallejo.....	\$3 00
Hair wreath.....	Mrs. H. L. Howard.....	Vallejo.....	\$3 00
Two moss pictures.....	Mrs. F. W. Ford.....	Vallejo.....	\$2 50
Penmanship.....	Fred. Hunt.....	Vallejo.....	\$2 50
Penmanship, from public schools.....	Dollie Edgcombe.....	Vallejo.....	\$2 50
Hairwork.....	Mrs. J. C. Brown.....	Vallejo.....	\$3 00
Hair wreath.....	Mrs. J. Horn.....	Vallejo.....	\$3 00
Kensington painting.....	Mrs. A. H. Richart.....	Vallejo.....	\$4 00
Kensington painting.....	Miss M. McGrain.....	Vallejo.....	\$3 00
Bead basket.....	Miss Nellie Dalton.....	Vallejo.....	\$3 00
Twelve pieces, oil paintings.....	Mrs. R. B. Bogle.....	Vallejo.....	\$4 00
Three pieces, water colors.....	Miss Alice Bogle.....	Vallejo.....	\$2 00
Best fancy and job printing.....	Pennycook & Harrier.....	Vallejo.....	\$3 00
Best newspaper printing.....	Pennycook & Harrier.....	Vallejo.....	\$3 00
Best two water colors.....	Miss Minnie Lamb.....	Vallejo.....	\$2 50
Best sketch, india ink.....	Miss Minnie Lamb.....	Vallejo.....	\$4 00
Best painted umbrella stand.....	Mrs. F. W. Gorham.....	Vallejo.....	\$3 00
Best two painted jars.....	Mrs. W. C. Turner.....	Vallejo.....	\$4 00
Best banner, Golden Rod.....	Mrs. F. E. Smith.....	Vallejo.....	\$3 00
Best two ladies' watch chains, hair.....	Mrs. Martin Aden.....	Vallejo.....	\$3 00
Best two plaques, painted.....	Miss Lizzie Tobin.....	Vallejo.....	\$3 00
Best two pictures.....	Chas. McGettigan.....	Vallejo.....	\$3 00
Best wax cross.....	E. McGuire.....	Vallejo.....	\$2 00
Best waxwork.....	Mrs. A. C. Berg.....	Vallejo.....	\$3 00
Painted piano cover.....	Miss F. Hunter.....	Vallejo.....	\$3 00
Best exhibit paintings.....	Miss M. K. Lundquest.....	Vallejo.....	\$3 00
Best exhibit crayon work.....	Miss Jennie Hall.....	Vallejo.....	\$3 00
Best exhibit pencil drawing.....	Ralph Robinson.....	Vallejo.....	\$5 00
Best exhibit kensington paintings.....	Mrs. F. W. Ford.....	Vallejo.....	\$3 00
Best exhibit waxwork.....	Miss J. McCudden.....	Vallejo.....	\$4 00
Best exhibit hairwork.....	Mrs. G. Greenwood.....	Vallejo.....	\$4 00
Best exhibit painting from nature.....	Miss M. Damouth.....	Vallejo.....	\$5 00
Best exhibit collection of paintings.....	Mrs. Painter's art class.....	Vallejo.....	\$5 00
Best exhibit collection of paintings.....	Mrs. Painter.....	Vallejo.....	\$4 00
Best exhibit collection of paintings on canvas.....	Miss A. Hilltois.....	Vallejo.....	\$3 00
Best exhibit penmanship and pen drawing.....	W. H. Tripp.....	Vallejo.....	\$10 00
Best exhibit art material.....	W. Dudley.....	Vallejo.....	\$10 00
CLASS XI.			
Best Masonic apron.....	Mrs. J. W. Farmer.....	Vallejo.....	\$1 00
Best two quilts, patchwork.....	Mrs. John Wilson.....	Vallejo.....	\$2 50
Best three rope rugs.....	S. Sampson.....	Vallejo.....	\$1 00
Best five fancy twine baskets.....	S. Sampson.....	Vallejo.....	\$2 00
Best plaque.....	Mrs. F. Manson.....	Vallejo.....	\$2 00
Best worsted wreath.....	Miss Emma Colby.....	Vallejo.....	\$2 50
Best two embroidered aprons.....	Miss K. Hendrickson.....	Vallejo.....	\$1 00
Best two worsted pictures.....	Mrs. F. Gorham.....	Vallejo.....	\$2 50
Best embroidered banner, 44 pieces.....	Mrs. F. Gorham.....	Vallejo.....	\$2 00
Best embroidered sofa pillow.....	Mrs. F. Gorham.....	Vallejo.....	\$2 50

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best child's dress.....	Mrs. Jennie Edge.	Vallejo	\$2 50
Best three yokes.....	Mrs. J. Halladay	Vallejo	\$2 50
Best crochet skirt.....	Mrs. M. Manson	Vallejo	\$2 00
Best and largest collection of fancy work.	Miss M. McGrain	Vallejo	\$2 50
Best sofa cushion.....	Miss G. Howard	Vallejo	\$2 00
Best crazy quilt.....	Mrs. F. Gorham	Vallejo	\$1 00
Best piece of point lace.....	E. C. Corwin	Vallejo	\$3 00
Best crazy quilt.....	Miss Flora Hunter	Vallejo	\$3 00
Best buggy robe.....	Miss Flora Hunter	Vallejo	\$3 00
Best crazy quilt.....	Miss M. Engle- bright	Vallejo	\$2 00
Best ornamental table cover.....	Miss J. Brownlie	Vallejo	\$2 50
Best two rag rugs.....	Mrs. Thos. Brown	Vallejo	\$1 50
Best robe and banner, Masonic.....	Mrs. D. W. Harrier	Vallejo	\$6 00
Best three pieces of etching.....	Miss M. Harrier	Vallejo	\$2 00
Best cotton embroidery.....	Mrs. G. W. Edg- cumbe	Vallejo	\$2 50
Best washing and ironing.....	Mrs. G. W. Edg- cumbe	Vallejo	\$3 00
Best three pieces of crochet work.....	Dollie Edgumbe	Vallejo	\$2 00
Best knitting.....	Miss Winnie Phil- lips (under 16).....	Vallejo	\$2 50
Best needlework and lace.....	Mrs. Ford	Vallejo	\$2 50
Best kensington painting, banner.....	Mrs. Ford	Vallejo	\$2 00
Best lady's dress.....	Mrs. S. Edgumbe	Vallejo	\$2 50
Best quilting.....	Mrs. S. Edgumbe	Vallejo	\$2 50
Best crochet shawl.....	Mrs. L. Webster	Vallejo	\$2 50
Best two pair of curtain holders.....	Mrs. J. McCudden	Vallejo	\$2 00
Best ten rugs.....	Mrs. J. McCudden	Vallejo	\$2 50
Best two crazy quilts.....	Miss M. McCudden	Vallejo	\$4 00
Best piece of crewel and applique.....	Miss A. H. Richart	Vallejo	\$3 00
Best crochet slippers.....	Miss Nellie Dallon	Vallejo	\$3 00
Best pillow scarf cushion.....	Mrs. R. and Miss M. Brown	Vallejo	\$4 00
Best crochet spread and shams.....	Miss E. Williams	Vallejo	\$2 50
Best knitting work.....	Mrs. E. Pennycook	Vallejo	\$1 50
Best two chemise yokes.....	Mrs. E. Pennycook	Vallejo	\$2 50
Best exhibit of sewing machine work.....	Z. T. Justus	Vallejo	\$2 50
Best feather wreath.....	Mrs. G. Greenwood	Vallejo	\$3 00
Best two pillow slips, tatting.....	Mrs. G. Greenwood	Vallejo	\$1 50
Best apron crochet edging.....	Miss E. Greenwood	Vallejo	\$2 00
Best piece of patchwork.....	Miss J. Greenwood	Vallejo	\$2 00
Best table cover.....	Mrs. E. Newcombe	Vallejo	\$2 50
Best crochet lamp shade.....	Mrs. L. Newcombe	Vallejo	\$1 00
Best exhibit of needlework.....	Mrs. J. W. Breed	Vallejo	\$5 00
Best two dresses and cap.....	Mrs. D. Emmerson	Vallejo	\$5 00
Best embroidered shawl.....	Mrs. A. E. Edg- cumbe	Vallejo	\$2 00
Best three yards of crochet lace.....	Mrs. A. E. Edg- cumbe	Vallejo	\$2 00
Best crazy quilt.....	Miss M. Newcombe	Vallejo	\$1 00
Best exhibit of patchwork, 2,952 pieces.....	Mrs. C. A. Johnson	Vallejo	\$1 00
Best pincushion.....	Miss Minnie Lamb	Vallejo	\$2 50
Best two etched aprons.....	Miss M. Welsh	Vallejo	\$1 50
Best exhibit of fancy work.....	Mrs. P. Rathen- busch	Vallejo	\$5 00
Best three pair of knitted stockings.....	Mrs. Maulbecker	Vallejo	\$1 50
Best needlework.....	Mrs. Julia Hays	Vallejo	\$1 00
Best buggy robe.....	Mrs. J. Steffen	Vallejo	\$2 00
Best apron knitting.....	Mrs. D. G. Barnes	Vallejo	\$2 00
Best two rugs.....	Mrs. A. Winslow	Vallejo	\$2 00
Best two crochet skirts.....	Mrs. F. W. Loeber	St. Helena	\$3 00
Best two exhibits of crochet.....	Mrs. F. W. Loeber	St. Helena	\$4 00
Best exhibit of washing and ironing.....	Mrs. A. J. McKike	Vallejo	\$2 00
Best three crochet yokes.....	Miss M. Springer	Vallejo	\$1 00
Best three crayon pictures.....	Miss J. Hall	Vallejo	\$3 00
Best exhibit of millinery.....	Miss K. McEnnery	Vallejo	\$3 00
Best Masonic badge banner.....	Miss E. Wakely	Vallejo	\$2 00
Best pair quilted shams.....	Miss K. Flemming	Vallejo	\$2 50

SECOND DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Best shams, yoke or lace	Miss B. Hirsch-		
	field.....	Vallejo	\$1 50
Best picture of ship	H. Johnson.....	Vallejo	\$2 00
Best piano scari	Miss L. Tobin.....	Vallejo	\$3 00
Best crazy quilt	Mrs. E. L. Brennan ..	Vallejo	\$5 00
Best two tidies	Miss E. L. Coates ..	Vallejo	\$1 00
Best exhibit millinery	Mrs. Tregaskis.....	Vallejo	\$5 00
CLASS XII.			
Best two cakes	Miss I. Roney	Vallejo	\$5 00
Best exhibit cakes and tarts.....	Miss E. C. Corwin ..	Vallejo	\$2 00
Best bread and cake	Miss M. Deming.....	Vallejo	\$3 00
Best loaf bread	Miss P. Snider	Vallejo	\$5 00
Best exhibit of confectionery	A. J. Tioilegar	Vallejo	\$2 50
Best brown bread and gold cake ..	Mrs. A. J. McPike.....	Vallejo	\$5 00
Best white bread and marble cake ..	Mrs. A. J. McPike.....	Vallejo	\$5 00
Best cocoanut cream cake	Miss S. McCool	Vallejo	\$2 00
Best loaf white bread	Miss M. Manseno.....	Vallejo	\$4 00
Best corn bread and tarts	Mrs. J. Tobin	Vallejo	\$3 50
Best cream cake	Miss Ada Holton	Vallejo	\$1 00
Best cake	Miss Ella Johnson ..	Vallejo	\$4 00
Best painting on china	Miss Alice Boyle	Vallejo	\$3 00
Best paper flowers	Miss M. Fisher	Vallejo	\$2 50
Best basket flowers	Miss S. White	Vallejo	\$2 50
Best paper flowers	Miss F. Cassidy	Vallejo	\$2 50
Best paper flowers	Miss Bell Roney	Vallejo	\$2 50
Best collection of pictures	Miss S. Gorham	Vallejo	\$1 00
Best Continental money, 112 years ..	Mrs. R. Walker	Vallejo	\$1 00
Best collection and variety of buttons.....	Miss Lidy Wilson.....	Vallejo	\$1 00
CLASS XIII.			
Best seven pots ferns	Miss R. Cassidy	Vallejo	\$1 50
Best flowers	Mrs. H. Engle-		
	bright	Vallejo	\$2 00
Best eight house plants	Mrs. J. C. Brown	Vallejo	\$1 00
Best nine varieties plants	P. Hassett	Vallejo	\$5 00
Best seven pot plants	Mrs. H. Engle-		
	bright	Vallejo	\$2 00
Best ornamental plants	Mrs. E. McGuire	Vallejo	\$2 50
Best floral design	Miss F. Deming.....	Vallejo	\$2 00
Best floral design	Mrs. H. Engle-		
	bright	Vallejo	
Best evergreen berry	Jos. Beyerle	Vallejo	\$1 00
Best equestrian lady	Miss Barry	Vallejo	\$5 00

SPEED PROGRAMME.

TUESDAY, OCTOBER 4, 1887.

RACE No. 1—TROTTING.

2:21 Class. Purse, six hundred dollars. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Black Diamond	H. Hitchcock .....	..... Denver.
Sister	John Goldsmith .....	..... San Francisco.
Woodnut	B. C. Holly .....	..... Vallejo.
Jane L.	Lee Shaner .....	..... Oregon.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Black Diamond	Woodnut
2. Sister	Sister
3. Woodnut	Black Diamond
4. Jane L.	Jane L.

Time—2:25; 2:23 $\frac{3}{4}$; 2:21 $\frac{1}{2}$.

RACE No. 2—RUNNING.

Purse, three hundred dollars. Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ninena	B. C. Holly .....	..... Vallejo.
Topedo	D. Tully .....	..... San Francisco.
Sunday	B. C. Holly .....	..... Vallejo.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Ninena	Ninena
2. Torpedo	Torpedo
3. Sunday	Sunday

WEDNESDAY, OCTOBER 5, 1887.

RACE No. 3—TROTTING.

Purse, two hundred dollars. For two-year olds. Mile heats; best two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Silas Skinner	Wm. McGraw .....	..... Napa.
Starr K	Thomas Smith .....	..... Vallejo.
Redwood	A. McFadyen .....	..... Petaluma.
Anti-Coolie	D. R. Misner .....	..... Petaluma.

RACE No. 3—TROTTING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Silas Skinner	Starr K
2. Starr K	Silas Skinner
3. Redwood	Anti-Coolie
4. Anti-Coolie	Redwood
<i>Time</i> —2:49½; 2:50; 2:51½.	

RACE No. 4—TROTTING.

Purse, three hundred dollars. For all horses that never beat 3:00. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Burton	C. W. Gardner	Napa.
Membrino Chief	Thomas Smith	Vallejo.
Solano Chief	Wm. McGraw	Napa.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Burton	Burton
2. Membrino Chief	Membrino Chief
3. Solano Chief	Solano Chief
<i>Time</i> —2:44½; 2:41½; 2:39¼.	

THURSDAY, OCTOBER 6, 1887.

RACE No. 5—TROTTING.

Purse, three hundred dollars. For three-year olds in district.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
St. Jacob	W. P. Fine	Petaluma.
Annette	F. R. Vail	Petaluma.
Daisy S.	Thomas Smith	Vallejo.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. St. Jacob	Annette
2. Annette	St. Jacob
3. Daisy S.	Daisy S (went lame, did not start)...
<i>Time</i> —2:51½; 2:49; 2:49.	

RACE No. 6—RUNNING.

Purse, two hundred and fifty dollars. Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Torpedo	D. Tully	San Francisco.
Ninena	B. C. Holly	Vallejo.
Sunday	B. C. Holly	Vallejo.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Torpedo	Ninena
2. Ninena	Sunday
3. Sunday	Torpedo

FRIDAY, OCTOBER 7, 1887.

RACE NO. 7—TROTTING.

2:40 Class. Purse, four hundred dollars. For all horses in the district. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maud	Wm. McGill	Vallejo.
Flora B	H. V. Starr	Napa.
Burton	C. W. Gardner	Napa.
Nightingale	Joseph Edge	Vallejo.

*Position at Starting.**Position at Close.*

1. Maud	Flora B	1
2. Flora B	Nightingale	2
3. Burton	Burton	3
4. Nightingale	Maud	4

Time—2:35; 2:38; 2:36½.

RACE NO. 8—TROTTING.

Match race. Private purse, two hundred dollars; twenty-five dollars added by the society. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fannie Clark	Lieut. Turner	Vallejo.
Pattie	C. McSorley	Vallejo.

*Position at Starting.**Position at Close.*

1. Fannie Clark	Pattie	1
2. Pattie	Fannie Clark	2

Time—2:53; 2:51½; 2:53¼.

RACE NO. 9—TROTTING.

Special purse, seventy-five dollars. Mile heats, three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Patti	Thomas Smith	Vallejo.
Annette	F. R. Vail	Petaluma.
St. Jacobs	W. P. Fine	Petaluma.

*Position at Starting.**Position at Close.*

1. Patti	Annette	1
2. Annette	Patti	2
3. St. Jacobs	St. Jacobs	3

Time—2:50; 2:45; 2:46; 2:46.

SATURDAY, OCTOBER 8, 1887.

RACE NO. 10—TROTTING AND PACING.

Purse, three hundred dollars. Free for all. Three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Billy Bunker	H. Hitchcock	Denver, Col.
Ella S.	L. Smith	San Francisco.
Lot Slocum	L. Shaner	San Francisco.
Jane L.	L. B. Lindsey	Oregon.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Billy Bunker	Lot Slocum	1
2. Ella S.	Billy Bunker	2
3. Lot Slocum	Jane L.	3
4. Jane L.	Ella S.	4
<i>Time—2:25$\frac{1}{4}$; 2:23$\frac{1}{2}$; 2:21$\frac{3}{4}$.</i>		

RACE NO. 11—TROTTING.

Purse, three hundred dollars. Best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Carl	H. Hitchcock	San Francisco.
Palitina	L. B. Lindsey	Oregon.
Boss	S. Sperry	Petaluma.
<i>Position at Starting.</i>		<i>Position at Close.</i>
1. Carl	Carl	1
2. Palitina	Palitina	2
3. Boss	Boss	3
<i>Time—2:32$\frac{1}{4}$; 2:34$\frac{3}{4}$; 2:30$\frac{1}{2}$.</i>		

TRANSACTIONS

OF THE

TWENTY-SIXTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1887,

Composed of the Counties of Amador and Calaveras.

OFFICERS OF THE ASSOCIATION.

U. S. GREGORY	President.
CLOVIS T. LaGRAVE	Secretary.
GEORGE WOOLSEY	Treasurer.

DIRECTORS.

B. ISAACS	Ione, Amador County.
I. N. HOLMAN	Wallace, Calaveras County.
F. FRATES	Ione, Amador County.
A. G. SMITH	Plymouth, Amador County.
H. A. MESSENGER	Valley Springs, Calaveras County.
W. P. PEEK	Jackson, Amador County.
C. GARDELLA	Mokelumne Hill, Amador County.
U. S. GREGORY	Ione, Amador County.

REPORT.

January 1, 1888.

To the honorable the State Board of Agriculture :

GENTLEMEN: The Directors of the Twenty-sixth District Agricultural Association submit this, their report of the transactions of said association, for the year ending this date.

CLOVIS T. LAGRAVE, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Life membership	\$775 00
Annals	647 50
Double season tickets	75 00
Park and Pavilion gate receipts	1,353 50
Race entrance money	555 00
Stock privileges	30 00
Park and Pavilion privileges	1,189 35
Advertisements in premium list	26 00
Wood sold	75 10
Subscriptions	6,787 50
	<hr/> \$11,514 45

Expenditures.

For construction of track, buildings, fences, etc.	\$7,995 97
Race purses paid	2,130 00
Premiums paid	418 50
Brass band	150 00
Fair laborers, hay, material, etc.	535 00
Posters, premium lists, advertisements, tickets, postage, stationery, etc.	243 50
Repairing Park after fair	40 00
	<hr/> \$11,512 97

EXHIBITS AT THE FAIR—1887.

FIRST DEPARTMENT.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS I—THOROUGHBRED HORSES.		
Jack Braddy	Walter Davis	Copperopolis.
Susie	R. T. McCarty	Copperopolis.
CLASS II—GRADED HORSES.		
W. H. Parker	W. C. Fairbairn	Ione.
Bertie N	W. M. Nichols	Ione.
Young Eureka	H. Dutschke	Ione.
Painkiller	H. E. Barton	Latrobe.
CLASS III—FAMILIES.		
Nellie, and three colts	B. Isaacs	Ione.
Dock, and five colts	B. Isaacs	Ione.
CLASS IV—HORSES OF ALL WORK.		
Clayton	J. G. Parkinson	Ione.
Rex	E. G. Amick	Ione.
Honest John	John Gregory	Ione.
Oddfellow	J. W. Parkinson	Ione.
Nip	W. C. Fairbairn	Ione.
Maggie Doyle	W. H. Carley	Drytown.
Gentle Annie	W. H. Prouty	Ione.
Amador Chieftain	H. Dutschke	Ione.
Sampson	E. Muldoon	Jackson.
CLASS V—ROADSTERS.		
Davy Crocket	H. H. Waters	Ione.
Frank	J. Newman	Ione.
Charlie	J. C. Harding	Ione.
CLASS VI—CARRIAGE HORSES.		
Belle	L. F. Walker	Ione.
Dexter	E. G. Amick	Ione.
Jenny Lind	H. H. Waters	Ione.
Mary Ann	W. H. Prouty	Ione.
Black Charley	J. C. Harding	Ione.
CLASS VII—DRAFT HORSES.		
Marmaduke	M. J. Talbott	Sutter Creek.
Amador Dick	J. H. Thomas	Amador City.
Mollie	A. B. McDonald	Ione.
Prince	Robert Downey	Ione.
Nutwood	W. H. Prouty	Ione.
Colonel	Thomas Frakes	Sutter Creek.
George	George Woolsey	Ione.
CLASS VIII—JACKS AND JENNIES.		
Dick	T. L. Culbert	Amador City.
Jennet	T. L. Culbert	Amador City.
CLASS IX.		
Two mules, unnamed	Dennis Scully	Ione.
CLASS X—THOROUGHBRED CATTLE.		
Cochise	Barney & Voorhies	Drytown.
Bull	B. Isaacs	Ione.
Nine calves	Ione Coal Co.	Ione.

FIRST DEPARTMENT—Continued.

Name of Animal.	Name of Owner.	P. O. Address.
CLASS XII—GRADED CATTLE.		
Frank	A. Thompson	Ione.
Nellie	C. J. Gregory	Ione.
Rosie	P. Kennedy	Ione.
Bettie	P. Kennedy	Ione.
Prince Edward	T. McSorley	Mokelumne Hill.
Cleveland	R. H. Bagley	Ione.
CLASS XIV.		
Band of five angora goats	J. W. Jones	Ione.
CLASS XV—SWINE.		
Herd of fourteen—six exhibits	W. H. Prouty	Ione.
Ten hogs—three exhibits	B. Isaacs	Ione.
CLASS XVI—POULTRY.		
Two geese	C. J. Gregory	Ione.
Two turkeys	C. J. Gregory	Ione.

SECOND DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Cabinet collection	Mrs. S. A. Welch	Ione	Diploma.
Mineral cabinet	W. E. Edmonds	Ione	Diploma.
Gold specimens	Con. Plym'th Mine	Plymouth	Diploma.
Gold specimens	J. Call	Drytown	Diploma.
Soapstone	T. W. Loomis	Ione	Diploma.
CLASS II.			
Hand-rake	G. C. Jennings	Drytown	Diploma.
Washing machine	O. E. Martin	Amador City	Diploma.
Steel plow	G. Woolsey	Ione	
Ironing board	E. A. Ketchum	Ione	Diploma and \$2 50
Sod plow	B. Isaacs & Bro.	Ione	Diploma.
Harrow and cultivator	B. Isaacs & Bro.	Ione	Diploma.
Horse hay rake	B. Isaacs & Bro.	Ione	Diploma.
Mower	B. Isaacs & Bro.	Ione	
Subsoil plow	B. Isaacs & Bro.	Ione	Diploma.
Stubble plow	B. Isaacs & Bro.	Ione	Diploma.
CLASS III.			
Spring cart	F. W. Knapp	Oleta	Diploma and \$3 00
Dead-ex wagon	B. Isaacs & Bro.	Ione	Diploma.
Top buggy	H. M. Bernard	Sacramento	Diploma.
Open buggy	H. M. Bernard	Sacramento	Diploma.
Padded road cart	H. M. Bernard	Sacramento	Diploma.

THIRD DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Fine boots	L. M. Earle	Lancha Plana...	Diploma and \$3 00
Fine shoes	L. M. Earle	Lancha Plana...	Diploma and \$3 00
Harness and saddles	U. S. Gregory	Ione	Diploma.
CLASS II.			
Dental work	O. T. Wilson	Ione	Diploma and \$3 00
Horseshoes	G. Lemoin	Drytown	Diploma and \$5 00
Sewing machine	R. S. Love	Ione	Diploma.
CLASS III.			
Pole climbers	W. M. Peury	Jackson	Diploma.
School desk	G. F. Mack	Ione	Diploma.
Carved table	L. Rabolt	Sutter Creek...	Diploma and \$3 00
Cowhorn cane	F. B. Lemoin	Drytown	Diploma.
Chamber set	B. Isaacs & Bro...	Ione	Diploma.
CLASS IV.			
Statuary marble	C. Schallhorn	Oleta	Diploma and \$2 50
Asbestos	G. C. Jennings	Drytown	Diploma and \$1 00
Extracts	F. W. Knapp	Oleta	Diploma and \$2 50
Millinery	Black & McHardy	Ione	Diploma and \$7 50
Soapstone tool chest	A. P. Harmon	Jackson	Diploma.
Drugs and variety goods	Adams & Gregory	Ione	Diploma.
General merchandise	Newman Bros.	Ione	Diploma.
Glassware	Geo. Woolsey	Ione	Diploma.

FOURTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Wheat	Wm. Scully	Ione	\$3 00
Barley	E. G. Amick	Ione	\$3 00
Shelled corn	J. F. Martin	Ione	\$3 00
Hops	A. B. McDonald	Ione	\$2 00
CLASS II.			
Indian corn, two stalks	Joseph Winter	Ione	\$3 00
Sweet corn	Mrs. C. Bamert	Clements	\$3 00
Pop corn	W. H. Prouty	Ione	\$2 00
Irish potatoes	W. H. Prouty	Ione	\$5 00
Sweet potatoes	E. J. Diebold	Lancha Plana...	\$2 00
Tomatoes	George Dunlap	Ione	\$2 50
Cabb.	J. W. McMurray	Ione	\$2 50
Stock beets	Geo. Withington	Ione	\$2 00
Table beets	Mrs. G. Dunlap	Ione	\$2 00
Largest squash	Thos. Leary	Ione	\$2 00
Display squashes	Thos. Clifton	Ione	\$2 00

FOURTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
Pumpkin	Wm. Templeton	Ione	\$2 00
Egg plant	J. Garibaldi	Drytown	\$1 00
Watermelons	E. J. Diebold	Lancha Plana	\$2 00
Muskmelons	W. H. Prouty	Ione	\$1 50
Green peppers	John Antone	Lancha Plana	\$1 00
Garden vegetables	W. H. Prouty	Ione	\$5 00
Garden vegetables	R. Lucas	Lancha Plana	\$3 00
CLASS III.			
Floral design	Miss E. Woolsey	Ione	\$2 00
Flowering plants	W. C. T. U.	Ione	\$5 00
Flowering plants	Mrs. G. H. Dunlap	Ione	\$2 50
Hanging basket	Mrs. J. D. Wanger- in	Ione	\$1 00
Cut flowers	Mrs. Hass	Ione	\$1 00
Bouquet	Mrs. W. H. Prouty	Ione	\$1 00
CLASS IV.			
Butter	Miss L. Dutschke	Ione	\$3 00
CLASS V.			
Bread	Mrs. J. Robinson	Ione	\$2 00
Bread	Mrs. J. Browning	Ione	\$1 00

FIFTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Apples	A. M. Hale	Pine Grove	\$7 50
Apples	W. H. Prouty	Ione	\$6 00
Peaches	W. E. Edmonds	Ione	\$5 00
Peaches	C. S. Black	Ione	\$3 00
Pears	J. Garibaldi	Drytown	\$7 50
Pears	C. Dosch	Ione	\$6 00
Figs	W. G. Edgar	Ione	\$3 00
Oranges	J. Northrup	Lancha Plana	\$5 00
Lemons	J. Garibaldi	Drytown	\$5 00
Blackberries	Geo. Woolsey	Ione	\$1 00
Table grapes	John Northrup	Lancha Plana	\$5 00
Table grapes	Mrs. C. Bamert	Clements	\$3 00
Mountain fruits	F. W. Knapp	Oleta	\$15 00
Pomegranates	Mrs. C. Bamert	Clements	\$3 00
Pawpaws	R. Lucas	Lancha Plana	\$1 50
CLASS II.			
Dried apples	Geo. Woolsey	Ione	\$3 00
Dried apples	N. B. McDonald	Ione	\$2 00
Dried pears	Geo. Woolsey	Ione	\$3 00
Dried pears	R. Lucas	Lancha Plana	\$3 00
Dried prunes	Geo. Woolsey	Ione	\$3 00
Dried figs	Mrs. J. Woolsey	Ione	\$2 00
Raisins	W. G. Edgar	Lancha Plana	\$3 00
Display dried fruits	Geo. Woolsey	Ione	\$5 00
English walnuts	R. Lucas	Lancha Plana	\$1 50
Black walnuts	R. Lucas	Lancha Plana	\$1 50
Soft-shelled almonds	F. W. Knapp	Oleta	\$1 50
Peanuts	W. H. Prouty	Ione	\$1 50

TRANSACTIONS OF THE
FIFTH DEPARTMENT—Continued.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS III.			
Fruit in glass	Mrs. Geo. Dunlap.	Ione	\$3 00
Fruit in glass	Mrs. J. Parkinson.	Ione	\$2 00
Jellies	Mrs. I. N. Holman.	Wallace	\$3 00
Jellies in glass	Mrs. M. Blauvelt.	Ione	\$2 00
Pickles in glass	Mrs. Geo. Dunlap.	Ione	\$2 00
CLASS IV.			
Dry wine	Geo. Woolsey	Ione	\$3 00
Sweet wine	W. G. Edgar	Ione	\$3 00
Beer	Jos. Heirschle	Ione	Diploma and \$3 00

SIXTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Quilt	Mrs. J. Woolsey ..	Ione	\$1 50
Pillow shams and quilt	Mrs. J. Toubey ..	Ione	\$2 00
Crochet tidy	Mrs. C. Robinson ..	Drytown	\$1 00
Handkerchief case	Mrs. O. T. Wilson ..	Ione	\$1 50
Child's afghan and emb. pincushion	Mrs. U. S. Gregory ..	Ione	\$2 50
Chenille chair seat	Mrs. J. Neuman ..	Ione	\$2 50
Carriage afghan	Mrs. G. Withington ..	Ione	\$2 50
Paper flowers	Miss Mary Mails ..	Sutter Creek	\$1 50
Chenille table scarf	Miss Mary Mails ..	Sutter Creek	\$2 00
Sofa pillow	Mrs. J. W. Perry ..	Plymouth	\$1 50
Crochet bedspread	Mrs. M. Soleri ..	Sutter Creek	\$2 50
Knit bedspread	Mrs. J. B. Luddy ..	Mok. Hill	\$2 00
Embroidered table scarf	Mrs. J. B. Luddy ..	Mok. Hill	\$2 50
Knit work	Mrs. A. N. Peterson ..	Sutter Creek	Dip. and \$5
Crochet shawl	Miss T. Thompson ..	Ione	\$2 50
Knit lace	Mrs. J. Fitzimmons ..	Ione	\$1 00
Hair work	Mrs. A. Welch ..	Ione	Diploma.
Quilt	Mrs. M. Edmonds ..	Ione	\$1 00
Quilt	Mrs. M. E. Rendell ..	Ione	\$2 00
Skirt	Mrs. M. E. Rendell ..	Ione	\$2 50
Panels and plaques	Mrs. C. T. La Grave ..	Ione	\$2 50
Lace handkerchief	Mrs. F. H. Thoms ..	Plymouth	\$2 50
Crazy quilt	Mrs. J. Call ..	Drytown	\$3 00
Knit underwear	Mrs. F. Henderson ..	Drytown	\$2 50
Crochet pillow shams	Mrs. J. Parkinson ..	Ione	\$2 50
Etched pillow and sheet shams	Mrs. F. Free ..	Ione	\$1 50
Silk quilt	Mrs. G. McFarland ..	Sutter Creek	\$1 50
Table cover	Mrs. H. Town ..	Sutter Creek	\$2 50
House rugs	Mrs. N. Gillis ..	Ione	Diploma and \$1 50
Lace and chenille work	Miss K. Wilbur ..	Buckeye	Diploma.
Piano cover	Mrs. J. Browning ..	Ione	\$2 50
Quilt (16,200 pieces)	Mrs. L. M. Earle ..	Lancha	Diploma and \$2 50
Crochet work	Miss R. Coddington ..	Ione	\$5 00
Goblets growing salt	Mrs. J. Mullen ..	Ione	\$1 00
Flower wreath	Mrs. J. F. Purdy ..	Ione	\$1 50
CLASS II—JUVENILE.			
Gauntlet gloves	Miss D. Thoms ..	Plymouth	\$1 00
Pincushion	Miss E. Hutchins ..	Ione	\$1 50
Paper flowers	Miss L. McCauley ..	Ione	\$1 00
Silk quilt	Miss Samis ..	Ione	\$1 50

SEVENTH DEPARTMENT.

Article Exhibited.	Exhibitor.	P. O. Address.	Award.
CLASS I.			
Oil painting (animal).....	Mrs. W. Moberry..	Ione .....	.....\$5 00
Oil painting (still life).....	O. T. Wilson.....	Ione .....	.....\$5 00
Collection of paintings.....	Mrs. W. Green.....	Drytown.....	.....\$5 00
Kensington painting.....	Mrs. J. Maestretti..	Ione .....	.....\$2 50
Painting on textile fabrics.....	Mrs. C. T. LaGrave..	Ione .....	.....\$2 50
Second best painting on textile fabrics.....	Miss E. Woolsey..	Ione .....	.....\$1 50
Water color painting.....	Mrs. S. L. Black.....	Ione .....	.....\$2 00
Kensington painted banner.....	Miss M. Marchant..	Ione .....	.....\$1 50
Collection of paintings.....	Miss Laura Swift..	Dry Creek	Diploma.
CLASS II.			
Pencil drawing.....	Miss R. Danielwicz..	Sutter Creek.....	.....\$1 50
Crayon drawing.....	Mrs. A. Welch.....	Ione .....	.....\$1 50
Collection of crayon drawings.....	Miss Danielwicz ..	Sutter Creek.....	Diploma.
CLASS V.			
Collection of photographs.....	C. Sutterly.....	Ione	Diploma and \$5 00

SPEED PROGRAMME.

WEDNESDAY, OCTOBER 5, 1887.

RACE No. 1—RUNNING.

Purse, one hundred and fifty dollars. For horses owned in Amador, Calaveras, and El Dorado Counties. Six hundred yards and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Black Oak, bk. g.	H. E. Barton	Latrobe.
Billy N, b. g.	U. S. Gregory	Ione.
Bodie, b. g.	James Morris	Plymouth.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Black Oak	Bodie
2. Billy N	Billy N
3. Bodie	Black Oak

Time—0:33; 0:32½.

RACE No. 2—TROTTING AND PACING.

Purse, two hundred dollars. For horses owned in Amador, Calaveras, and El Dorado Counties. Mile heats; best two in three.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mt. Echo, y. g.	F. Seguin	Ione.
Roscoe, s. g.	I. N. Templeton	Sutter.
Dolly Bloodstone, b. m.	N. N. Craig	Valley Springs.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Mt. Echo	Dolly Bloodstone
2. Roscoe	Mt. Echo
3. Dolly Bloodstone	Roscoe

Time—3:06; 2:48.

RACE No. 3—RUNNING.

Purse, fifty dollars. For saddle horses owned in Amador, Calaveras, and El Dorado Counties. One-quarter mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Betsy, b. m.	Wesley Amick	Ione.
George, b. g.	R. T. McCartney	Copperopolis.
Parnell, b. g.	Dennis Scully	Ione.
Kitty, bk. m.	Alexander Braddy	Ione.
Minnie B, b. m.	H. E. Barton	Latrobe.
Barney G, b. g.	U. S. Gregory	Ione.

RACE No. 3—RUNNING—Continued.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Betsy.....	Barney G..... 1
2. George.....	Minnie B..... 2
3. Parnell.....	Betsy..... 3
4. Kitty.....	George..... 4
5. Minnie B.....	Kitty..... 5
6. Barney.....	Parnell..... 6

THURSDAY, OCTOBER 6, 1887.

RACE No. 4—PACING.

Purse, three hundred dollars. Entrance added. Mile heats; best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Charley Brown, g. g.	W. J. Ryan.....	
Fred Ross, b. g.	J. M. Alviso.....	Sacramento.
Bracelet, b. g.	J. R. Hodson.....	Sacramento.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Bracelet.....	Bracelet..... 1 1 2 1
2. Fred Ross.....	Fred Ross..... 2 2 1 2
3. Charley Brown.....	Charley Brown..... 3 3 3 3

Time—2:27; 2:28; 2:26; 2:27½; 2:30.

RACE No. 5—RUNNING.

Novelty race. Fifty dollars to winning horse at each quarter. Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Oscar Wilde, b. s.	E. Flitner.....	
Franklin, ch. h.	Jos. Danker.....	Stockton.
Bodie, b. g.	James Morris.....	Plymouth.
Black Oak, blk. g.	H. E. Barton.....	Latrobe.
Norton, b. g.	N. Smith.....	
Sleepy Dick, s. g.	F. M. Starkey.....	Lockeford.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Oscar Wilde.....	Sleepy Dick, first at every quarter.
2. Franklin.....	
3. Bodie.....	
4. Black Oak.....	
5. Norton.....	
6. Sleepy Dick.....	

Time—Quarter, 0:24; half, 0:31; three-quarter, 1:20; mile, 1:46.

RACE No. 6—RUNNING.

Special. Six hundred yards and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Barney G, b. g.	U. S. Gregory	Ione.
Alice, g. m.	D. Fugitt	Lockeford.
Lucy Penry, g. m.	A. C. Smith	Plymouth.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Barney G	Barney G
2. Alice	1
3. Lucy Penry	

Time—0:32½.

FRIDAY, OCTOBER 7, 1887.

RACE No. 7—RUNNING.

Purse, two hundred and fifty dollars. Free for all. Half mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack Braddy, b. g.	Davis Bros.	Copperopolis.
Billy N, b. g.	U. S. Gregory	Ione.
Minnie R, b. m.	E. Flitner	

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Jack Braddy	Jack Braddy
2. Billy N	Minnie R
3. Minnie R	Billy N

RACE No. 8—RUNNING.

Three quarters and repeat. Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Edwin F	D. Dennison	Sacramento.
Franklin	Jos. Danker	Stockton.
Plato	Geo. Harrison	Stockton.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Franklin	Plato
2. Edwin F	Edwin F
3. Plato	Franklin

Time—1:19; 1:18; 1:19.

RACE NO. 9—TROTTING AND PACING.

Special race. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Pedro	J. R. Hodson	Sacramento.
Jim A	— Jackson .....	.....
Stoneman	J. R. Beardsley	Stockton.
Tommy Benton .....	.....	.....
Connemara	S. Sperry	Petaluma.
Colonel Dickey	Geo. Harrison	Stockton.

<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Pedro	Colonel Dickey	1
2. Tommy Benton	Pedro	2
3. Colonel Dickey	Connemara	3
4. Jim A	Jim A	dis.
5. Stoneman	Stoneman	dis.
6. Connemara	Benton	dis.

SATURDAY, OCTOBER 8, 1887.

RACE NO. 10—RUNNING.

Match race. Six hundred yards dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Barney G, b. g.	U. S. Gregory	Ione.
Lucy Penry, g. m.	A. C. Smith	Plymouth.

<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Lucy Penry	Barney G	1
2. Barney G	Lucy Penry	2

Time—0:32½.

RACE NO. 11—TROTTING.

Special race. Mile heats; three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Artist	J. R. Hodson	Sacramento.
Ed	— Jackson	Sacramento.
Lucy	W. Ober	Sacramento.

<i>Position at Starting.</i>	<i>Position at Close.</i>
1. Ed	Artist
2. Lucy	Lucy
3. Artist	Ed

Time—2:34; 2:34; 2:34½; 2:36½; 2:37.

RACE NO. 12—RUNNING.

Free for all. Three quarters of a mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Franklin	Joseph Danker	Stockton.
Bodie	James Morris	Plymouth.
Minnie R	E. Flitner	Placerville.
Oscar Wilde	E. Flitner	Placerville.

<i>Position at Starting.</i>	<i>Position at Close.</i>	
1. Oscar Wilde	Bodie	1
2. Minnie R	Minnie R	2
3. Bodie	Oscar Wilde	3
4. Franklin	Franklin	4

Time—1:17½.

RACE NO. 13—PACING.

Bracelet, driven by owner, J. R. Hodson, paced one mile against his record.

Time—2:25.

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